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Applicant:	EWALD	:	Group Art Unit:	3625
Serial No.	10/672,133	:	Examiner:	Smith, J.
Filed:	09/26/2003	:	Confirmation No.	6111
For:	SYSTEM AND METHOD FOR PURCHASING LINKED WITH BROADCAST MEDIA	:	Attorney Docket No.	49663.21740

**Appeal Brief**

Mail Stop Appeal Brief--Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This is an appeal from the final rejection of claims 1-19 issued by the examiner on August 1, 2006. A Notice of Appeal is filed concurrently. This Appeal Brief is submitted under 37 CFR § 41.37. The Notice of Appeal fee of \$250.00 and the Appeal Brief fee of \$250.00 are enclosed. A one month extension of time is also hereby requested, and the requisite fee of \$60.00 is also enclosed herewith

**REAL PARTY IN INTEREST**

The real party in interest is the inventor Stephen A. Ewald.

**RELATED APPEALS AND INTERFERENCES**

Upon information and belief, the undersigned Attorney does believe that the only appeal or interference that will directly affect, be directly affected by or have a bearing on the Board's decision in this appeal is the previous appeal in this case, Appeal No. 2006-1365, opinion entered April 27, 2006. A copy of the opinion is included in the Related Proceedings Appendix.

### **STATUS OF CLAIMS**

Claims pending: 1-19  
Claims rejected: 1-19  
Claims withdrawn: None  
Claims allowed: None  
Claims appealed: 1-19

### **STATUS OF AMENDMENTS**

The amendment filed after final rejection on August 31, 2006 was not entered.

### **SUMMARY OF THE CLAIMED SUBJECT MATTER**

The citations to the specification and drawing locations are provided immediately following the elements of claims 1, 9 and 12, the only independent claims on appeal. However, such citations are provided merely as examples and are not intended to limit the interpretation of the claims or to evidence or create any estoppel.

#### **Claim 1**

A complete understanding of the system of claim 1 is best obtained by a thorough review of the specification and drawings of this application. To aid in this review claim 1 is reproduced below and reference made to figures and specification paragraphs where the claim elements are illustrated and discussed. Figure 1 provides a schematic overview of how a system according to claim 1 may be configured. An exemplary manner in which the system of claim 1 may be operated is set forth in the flowcharts of Figures 3 and 4.

1. A system for purchasing goods and services linked with broadcast media, comprising:

one or more broadcast receivers that receive a broadcast media including information relating to goods and services that can be purchased by persons receiving the media (An exemplary receiver **14** is illustrated in Figures 1 and 2 and discussed, e.g., in paragraphs **[0018]-[0024]** of the specification), each receiver further selectively receiving a purchase request (A “purchase request” is shown at box **70** of Figure 3 and discussed, e.g., in paragraph **[0026]** of the specification) and recording the purchase data (“Purchase data” is shown in boxes **72, 76, 78, 80, 82, 84** of Figure 3, boxes **90, 92, 94, 98** of Figure 4 and discussed, e.g., in paragraphs **[0027]-[0030]** of the specification) for goods and services that a person purchases relating to the broadcast media; and

one or more servers that selectively receive and verify purchase data sent from the one or more receivers (One or more servers are illustrated as elements **32** and **34** in Figure 1 and discussed, e.g., in paragraphs **[0019], [0020], [0028]-[0032]** of the specification. The operation of the server(s) is schematically exemplified in Figure 4.).

### **Claim 9**

A complete understanding of the receiver of claim 9 is best obtained by a thorough review of the specification and drawings of this application. To aid in this review claim 9 is reproduced below and reference made to figures and specification paragraphs where the claim elements are illustrated and discussed. Figures 1 and 2 schematically show an example of how a receiver of claim 9 may be configured. Figure 3 is an exemplary flowchart of how the receiver may operate.

9. A broadcast receiver for purchasing goods and services linked with broadcast media, the broadcast receiver receiving a broadcast media including information relating to goods and services that can be purchased by persons receiving the media (An exemplary receiver **14** is illustrated in Figures 1 and 2 and discussed, e.g., in paragraphs **[0018]-[0024]** of the specification), the broadcast receiver further selectively

receiving a purchase request (A “purchase request” is shown at box **70** of Figure 3 and discussed, e.g., in paragraph **[0026]** of the specification) and recording the purchase data (“Purchase data” is shown in boxes **72, 76, 78, 80, 82, 84** of Figure 3, boxes **90, 92, 94, 98** of Figure 4 and discussed, e.g., in paragraphs **[0027]-[0030]** of the specification) for goods and services that a person purchases linked with the broadcast media and selectively transmitting the purchase data to another computer device (“Another computer device” is exemplified by the one or more servers that are illustrated as elements **32** and **34** in Figure 1 and discussed, e.g., in paragraphs **[0019], [0020], [0028]-[0032]** of the specification. The operation of the server(s) is schematically exemplified in Figure 4.).

## **Claim 12**

A complete understanding of the method of claim 12 is best obtained by a thorough review of the specification and drawings of this application. To aid in this review claim 12 is reproduced below and reference made to figures and specification paragraphs where the claim elements are illustrated and discussed. The flowcharts of Figures 3 and 4 provide an example of how the method of claim 12 may be performed.

12. A method for purchasing goods and services linked with broadcast media, comprising the steps of:

receiving at a broadcast receiver a broadcast media including information relating to goods and services that can be purchased by persons receiving the media (An exemplary receiver **14** is illustrated in Figures 1 and 2 and discussed, e.g., in paragraphs **[0018]-[0024]** of the specification);

receiving at the broadcast receiver a purchase request (A “purchase request” is shown at box **70** of Figure 3 and discussed, e.g., in paragraph **[0026]** of the specification);

selectively recording purchase data at the broadcast receiver for a good and service that a person purchases relating to the broadcast media (“Purchase data” is

shown in boxes **72, 76, 78, 80, 82, 84** of Figure 3, boxes **90, 92, 94, 98** of Figure 4 and discussed, e.g., in paragraphs **[0027]-[0030]** of the specification) ;

sending the purchase data from the broadcast receiver to at least one server; receiving the purchase data at the at least one server; and verifying the purchase data from the broadcast receiver at the least one server (One or more servers are illustrated as elements **32** and **34** in Figure 1 and discussed, e.g., in paragraphs **[0019], [0020], [0028]-[0032]** of the specification. The operation of the server(s) is schematically exemplified in Figure 4.).

### **GROUND OF REJECTION TO BE REVIEWED**

- I. Claims 1-13 and 15-19 under 35 U.S.C. § 102(e) as anticipated by U.S. Patent Application Publication 2003/0132575 (Kesling).
- II. Claim 14 under 35 U.S.C. § 103(a) as obvious over Kesling in view of official notice regarding secure communication channels.

### **ARGUMENTS**

#### **I. Rejection of claims 1-13 and 15-19 under 35 U.S.C. §102(e) as anticipated by Kesling**

##### **A. Separate argument of claim 1**

Anticipation is an exacting standard. Under 35 U.S.C. § 102, every limitation of a claim must identically appear in a single prior art reference for it to anticipate the claim. *In re Bond*, 910 F.2d 831, 832, 15 USPQ2D 1566, 1567 (Fed. Cir. 1990). Implicit in a review of an examiner's anticipation analysis is that the claim must first have been correctly construed to define the scope and meaning of each contested limitation. See, e.g., *In re Paulsen*, 30 F.3d 1475, 1479, 31 USPQ2D 1671, 1674 (Fed. Cir. 1994) ("To

properly compare [an allegedly anticipatory prior art reference] with the claims at issue, we must construe the term 'computer' to ascertain its scope and meaning.").

Here, the system of claim 1 requires that "each receiver further selectively receiv[es] a purchase request and record[s] the purchase data for goods and services that a person purchases relating to the broadcast media" and "one or more servers that selectively receive and verify purchase data sent from the one or more receivers." When claim 1 is properly construed, it is seen that Kesling does not describe these claim limitations. Thus, the anticipation rejection of claim 1 based upon Kesling is legally and factually improper and should be reversed.

In construing these claim limitations it must be kept in mind that "as an initial matter, the PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification." *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997). Here, the specification provides enlightenment as to the meaning of these claim limitations.

The receiver of the system of claim 1 receives a "purchase request" and records "purchase data." The purchase request may be the simple act of pressing a button on the receiver. Specification, [0009]. When the receiver receives a "purchase request," it must also record "purchase data." Specification, e.g., [0009], [0018]. "Purchase data" are described as including "at the least identification of the purchaser, such as a code, token, MIN, Pin number, or other indicia and data sufficient to identify the good or service desired purchase." Specification, [0023]. The recognition of the purchaser can be "from a specific database of purchasers, such as those signed up for the service, or those identifiable...based upon purchase data." Specification, [0029]. Since the purchaser identification is "preloaded" in the system, either in the receiver and/or the server(s) that provide verification, if the broadcast media contains identification data of

the good or service the user desires to purchase, see, e.g., specification, [0022], “the purchase information is received...and the purchase data is generated....”

Specification, [0027]. Because of the unique nature of the “purchase data” of the present invention, the system of claim 1 allows for the purchase of goods and services from a broadcast media stream by simply initiating a “purchase request” and the purchase will be completed upon verification of the purchase data by the server(s), with no other action required by the user. In other words, the “purchase data” and server(s) required by claim 1 allow the purchase to be completed without “further interaction from the person to verify or follow through with the purchase.” Specification, [0008]. Kesling does not describe the “purchase data” and a server(s) that can verify the purchase data as required by claim 1.

Prior to discussing why Kesling does not describe the system of claim 1, the examiner’s rejection warrants discussion. An anticipation rejection cannot be constructed by “picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference.” *In re Arkley*, 455 F.2d 586, 587, 172 USPQ 524, 526 (CCPA 1972). Here, Kesling describes two broad embodiments of his system. The first embodiment is where the receiver uses a removable memory element to capture program identifiers. Kesling, [0018]. The second is where the receiver of Kesling uses a wireless link to capture and transmit program identifiers. *Id.* The two embodiments are mutually exclusive since Kesling states the wireless embodiment “eliminates the need for a flash memory card and provides the radio with interesting real-time interactive functionality.” *Id.*

Here the examiner’s rejection is improperly premised upon an apparent, albeit unclear, combination of these two separate embodiments. The statement of the rejection as it apparently pertains to claim 1 appears at pages 14-15 of the final rejection mailed August 1, 2006 (FR). As seen the rejection focuses on the method of the present invention, not the system of claim 1. The examiner first makes reference to paragraph [0039] and Figures 1-3 of Kesling and then paraphrases a “method” purportedly described by Kesling that is similar to a method that would be encompassed

by the present invention. In so doing, the examiner makes no findings of fact as to where Kesling allegedly describes any of the postulated method steps.

The examiner then proceeds to make reference to U.S. Patent Application 09/461,699 (Patsioskas)<sup>1</sup> that is discussed and incorporated by reference by Kesling at [0007]-[0010]. The examiner states the Kesling “builds upon” the system and method but does not support this assertion with any specific fact-finding. How the examiner is relying upon Patsioskas is unclear. If the examiner’s anticipation rejection is in fact premised upon a combination of features from the flash memory and wireless embodiments of Kesling and/or Patsioskas, the rejection is improper. *In re Arkley, supra*.

Another anomaly in the examiner’s rejection is that it does not take into account the previous Board decision. In “affirming” the examiner’s anticipation rejection premised upon Kesling, the Board engaged in its own fact-finding and relied upon facts not relied upon by the examiner. Specifically, the Board relied upon the “purchase” described in [0090] of Kesling. Slip op. at 3. The examiner has eschewed relying upon this portion of Kesling in stating the final rejection. Thus, it is not clear on what factual basis the examiner considers Kesling to describe the system of claim 1 when that claim is properly construed.

Turning to Kesling, it is seen that while Kesling describes a system that can purchase goods and services linked with a broadcast media, Kesling fails to describe that system in sufficient detail such that it can be concluded that the system of claim 1 is *identically* described by Kesling as required. *In re Bond, supra*.

Kesling involves a satellite radio broadcast system with a user interface **1000** that “allows the receiver to receive input from a listener/user indicating an interest in a given selection.” Kesling, [0041]. The pressing of the button **1220** selects a “program

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<sup>1</sup> This patent application has issued as U.S. Patent 7,010,263 on March 7, 2006, which is prior to the final rejection. Since the examiner relied upon the patent application in making the final rejection, this Appeal Brief is premised upon the patent application.



identifier” and the user receives a “media link”, which can be a physical or wireless link to more information about the program. Kesling, [0041], [0064], [0065]. In reviewing how a user “purchases” goods and services by way of the Kesling system it is seen that the user cannot simply press select button 1220 of the Kesling receiver and purchase the desired good or service. Rather, the “purchase” of a good or service by way of the Kesling system requires further intervention and action on the part of the user. The Kesling receiver does not receive “purchase data” as required by claim 1 that can be simply verified by the server(s) that receive the purchase data in order to complete the purchase.

This distinction between the respective systems is readily seen when Kesling is read in its entirety. For example, pressing select button 1220 is typically described by Kesling as only indicating listener interest in the broadcast media content and that a web site can send information about the content to the system user. Kesling, e.g., [0048]-[0051]. In discussing “purchasing” goods and services, Kesling simply fails to provide sufficient details of what purchase data, if any, is generated and how a purchase is executed. An example of this deficiency is seen in the description of a “purchase” at [0066] of Kesling where the “purchase” is premised upon the listener receiving further information. While this passage also states that the listener can “complete the transaction,” this passage does not describe the use of “purchase data” that can be verified by a server(s) of the system as required by the system of claim 1. This disclosure of a “purchase” lacks the specificity of description that is required by 35 U.S.C. § 102(e).

The same lack of specificity is seen in the “purchase” relied upon by the Board but not the examiner. The purchase described in [0090] is stated to only include identification of the program and the user being transmitted. This data is not the “purchase data” required by claim 1 and is insufficient to allow the purchase to be completed upon verification by the server(s) receiving the information.

The declaration of Walter E. Thain, Jr. filed under 37 CFR § 1.132 (Thain Dec.) supports this reading of Kesling. Mr. Thain provides context for an informed understanding of how the system of Kesling would be viewed by a person of ordinary skill in the art. Mr. Thain first outlines the steps required to complete a purchase either at a retail store or by way of an electronic transaction. Thain dec., paras. 5-9. As seen, the purchase data required by the system of claim 1 is sufficient to allow a purchase as outlined by Mr. Thain to be completed by the system of claim 1 without further interaction by the user to verify or follow through with the purchase.

Mr. Thain also states that the Kesling system is not described in sufficient detail so that it can be concluded that whatever data is transmitted by the Kesling receiver, it is not the purchase data required by claim 1. Thain dec., paras. 14-15. Thus, when the facts established by the Thain declaration are considered under the proper legal standard for an anticipation rejection set forth in *In re Bond, supra.*, it is seen that the examiner's anticipation rejection is improper.

Other evidence of record supports Mr. Thain's conclusions. Attention is directed to the user guide supplied with the inno<sup>tm</sup> portable satellite radio device sold by Pioneer. This document appears to have been published in 2006 as indicated by the copyright notice on page 2 and, thus, is not prior art. However, it is relevant evidence to establish that more description is needed in Kesling in order for that reference to be considered an anticipation of the system of claim 1. Of importance, the user guide illustrates that the inno<sup>tm</sup> device must use a commercial music download service if a user of the inno<sup>tm</sup> device wants to purchase songs. Thus, in order to conclude that Kesling describes a system according to claim 1, one would have to read into Kesling details such as those included in the inno<sup>tm</sup> user guide. To do so, is legally impermissible. *In re Bond, supra.*

It is also noted that in response to an argument in the previous appeal questioning whether Kesling was an enabled reference, the Board stated that the "lack of technical detail in the appellant's specification indicates that if one of ordinary skill in the art could carry out a radio-generated purchase based upon the appellant's

disclosure at the time of appellant's invention, that person could do the same given Kesling's disclosure." Slip op. at 4. Missing from the Board's analysis is an understanding that Kesling does not describe the "purchase data" required by the system of claim 1 and did not take into account that the server(s) of claim 1 must be able to verify the purchase data sent from the receiver(s). Since these are aspects of the present invention, not Kesling, it is perfectly logical to conclude that Kesling is not enabling as to these claim limitations. Kesling cannot enable what is not described in the reference. At best, the examiner and the Board have tried to flesh out the inadequate description of how a purchase might be completed by the Kesling system. However, the rejection under review is one of anticipation and is based upon Kesling alone. No other evidence is relied upon.<sup>2</sup>

Given the lack of detail set forth in Kesling as to how a purchase is completed, it is improper for the examiner and the Board to read such details into the disclosure of Kesling. The fact is, right where Kesling needs to provide details of that system, the reference is silent. Again, anticipation is a very exacting standard. Kesling does not meet this standard.

Withdrawal of the rejection is earnestly solicited.

**B. Separate argument of claims 2-7**

Solely for the purposes of this appeal, no separate argument is offered in regard to claims 2-7. These claims will stand or fall with claim 1.

Withdrawal of the rejection is earnestly solicited.

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<sup>2</sup> Neither the examiner nor the Board has explained with any specificity how Patsiokas is used in the rejection.

### **C. Separate argument of claim 8**

Apart from the reasons set forth above in regard to claim 1, which are incorporated by reference herein, claim 8 is separately patentable for the following additional reasons.

Claim 8 requires that “each broadcast receiver is comprised of at least two devices, to include a broadcast media receiver and a purchase selection device.” The examiner refers to Kesling [0042] as describing the broadcast receiver of Kesling may include an “intermediate transfer device” as a purchase selection device. FR, page 15. This is incorrect as the “intermediate transfer device” of Kesling is not a purchase selection device.

The subject matter of claim 8 is described in the present specification at page 7, [0024]. As seen, in this embodiment, the broadcast receiver does not have a purchase selector device. In contrast, the broadcast receiver of Kesling always has a purchase selector device, e.g., button 1220. [0041] of Kesling only describes an embodiment where information stored on a broadcast receiver having a purchase selection device is transferred to an intermediate device for storage.

Clarification is needed as to where Kesling describes that each broadcast receiver is comprised of at least two devices, to include a broadcast media receiver and a purchase selection device.

Withdrawal of the rejection is earnestly solicited.

**D. Separate argument of claim 9**

Apart from the reasons set forth above in regard to claim 1, which are incorporated by reference herein, claim 9 is separately patentable for the following additional reasons.

Claim 9 is directed to a receiver for purchasing goods and services linked with broadcast media. The arguments made above in regard to claim 1 are incorporated by reference herein. Importantly, the receiver of claim 9 must be able to receive a purchase request and record the purchase data for goods and services that a person purchases linked with the broadcast media. As explained above, Kesling does not describe the “purchase data” required by claim 9.

Withdrawal of the rejection is earnestly solicited.

**E. Separate argument of claims 10-11**

Solely for the purposes of this appeal, no separate argument is made as to claims 10-11. These claims will stand or fall together with claim 9.

Withdrawal of the rejection is earnestly solicited.

**F. Separate argument of claim 12**

Claim 12 sets forth a method for purchasing goods and services linked with broadcast media. The method of claim 12 requires, inter alia, that the receiver receives a purchase request and records purchase data for a good and service that a person purchases relating to the broadcast media. The purchase data is sent to at least one server where the purchase data is verified. When claim 12 is properly construed, it is seen that Kesling does not expressly describe these claim limitations.

Claim 12 is to be construed in the same manner as claim 1. The receiver of claim 12 receives a “purchase request” and records “purchase data.” The purchase request may be the simple act of pressing a button on the receiver. Specification, **[0009]**. When the receiver receives a “purchase request,” it must also record “purchase data.” Specification, e.g., **[0009]**, **[0018]**. “Purchase data” are described as including “at the least identification of the purchaser, such as a code, token, MIN, Pin number, or other indicia and data sufficient to identify the good or service desired purchase.” Specification, **[0023]**. The recognition of the purchaser can be “from a specific database of purchasers, such as those signed up for the service, or those identifiable...based upon purchase data.” Specification, **[0029]**. Since the purchaser identification is “preloaded” in the system, either in the receiver and/or the server(s) that provide verification, if the broadcast media contains identification data of the good or service the user desires to purchase, see, e.g., specification, **[0022]**, “the purchase information is received...and the purchase data is generated....” Specification, **[0027]**. Because of the unique nature of the “purchase data” of the present invention, the method of claim 12 allows for the purchase of goods and services from a broadcast media stream by simply initiating a “purchase request” and the purchase will be completed upon verification by the server(s), with no other action required by the user. In other words, the “purchase data” and server(s) required by claim 12 allow the purchase to be completed without “further interaction from the person to verify or follow through with the purchase.” Specification, **[0008]**. Kesling does not describe the “purchase data” and a server(s) that can verify the purchase data as required by claim 12.

Having construed claim 12 in the same manner as claim 1, it follows that the arguments made above in regard to claim 1 are equally applicable to claim 12. Rather, than burden the record by repeating these arguments, the arguments made above in regard to claim 1 are incorporated by reference herein.

Withdrawal of the rejection is earnestly solicited.

#### **G. Separate argument of claim 13**

Apart from the reasons set forth above in regard to claim 12, which are incorporated by reference herein, claim 13 is separately patentable for the following additional reasons.

Claim 13 requires that the purchase data is sent to a plurality of servers, storing the purchase data at one of the servers, and verifying the purchase data at a different server. The examiner has not explained where the steps of claim 13 are described in Kesling in the final rejection. Absent clarification where these claim limitations are described in Kesling, the rejection is improper.

Withdrawal of the rejection is earnestly solicited.

#### **H. Separate argument of claims 15-19**

Solely for the purpose of this appeal, claims 15-19 will not be separately argued. These claims will stand or fall with claim 12.

Withdrawal of the rejection is earnestly solicited.

### **II. Rejection of claim 14 under 35 U.S.C. §103(a) based upon Kesling and official notice regarding secure communication channels**

A conclusion of obviousness must be based upon the subject matter of a claim as whole. 35 U.S.C. § 103(a). Here, claim 14 depends from claim 12. As explained above in regard to claim 12, Kesling does not describe a method where the “purchase data” are of such a nature that allows for the purchase of goods and services from a broadcast media stream by simply initiating a “purchase request” and the purchase will

be completed upon verification by the servers, with no other action required by the user. Assuming arguendo that it would have been obvious to send the purchase data from the broadcast receiver to the server in claim 12 by way of a secure communication channel as required by claim 13, the examiner's rejection is improper since Kesling does not describe all of the steps required by claim 12. Thus, the examiner's obviousness rejection is legally and factually improper.

Withdrawal of the rejection is earnestly solicited.

### **CONCLUSION**

Anticipation is an exacting standard. Kesling simply does not describe the manner in which a purchase is conducted in sufficient detail such that it can be said to describe the systems, receivers and methods set forth in claims 1-19. Where detail is needed, Kesling remains silent. The anticipation and obviousness rejections of record are improper and the Board is asked to reverse all extant rejections.


No additional fees are believed due. However, the Commissioner is hereby authorized to charge any additional fees which may be required, including any necessary extensions of time, which are hereby requested, to Deposit Account No. 03-0683.



Respectfully submitted,

Stephen A. Ewald

By his Representatives,



Date 29 November 2006

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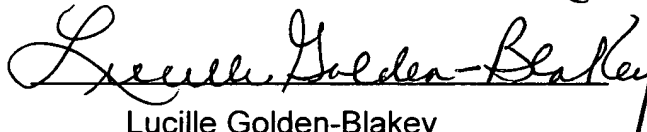
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CERTIFICATE UNDER 37 CFR 1.8

The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Appeal Brief-Patents, Commissioner of Patents, P.O. Box 1450, Alexandria VA 22313-1450, on this 29 day of November 2006.



Lucille Golden-Blakey

## **Claims Appendix**

1. A system for purchasing goods and services linked with broadcast media, comprising:

one or more broadcast receivers that receive a broadcast media including information relating to goods and services that can be purchased by persons receiving the media, each receiver further selectively receiving a purchase request and recording the purchase data for goods and services that a person purchases relating to the broadcast media; and

one or more servers that selectively receive and verify purchase data sent from the one or more receivers.

2. The system of claim 1, wherein each broadcast receiver is in communication with a server.

3. The system of claim 1, wherein each broadcast receiver stores the purchase data and transmit the stored purchase data at a predetermined location.

4. The system of claim 1, wherein each broadcast receiver includes a radio.

5. The system of claim 1, wherein the broadcast media includes information about the purchase of the goods and services.

6. The system of claim 1, wherein the broadcast media does not include information about the purchase of the goods and services.

7. The system of claim 1, wherein each broadcast receiver is a single device.

8. The system of claim 1, wherein each broadcast receiver is comprised of at least two devices, to include a broadcast media receiver and a purchase selection device.

9. A broadcast receiver for purchasing goods and services linked with broadcast media, the broadcast receiver receiving a broadcast media including information relating to goods and services that can be purchased by persons receiving the media, the broadcast receiver further selectively receiving a purchase request and recording the purchase data for goods and services that a person purchases linked with the broadcast media and selectively transmitting the purchase data to another computer device.

10. The broadcast receiver of claim 9, further comprising a purchase selection indicator.

11. The broadcast receiver of claim 9, wherein the broadcast receiver further stores the purchase data and transmits the stored data at a predetermined location.

12. A method for purchasing goods and services linked with broadcast media, comprising the steps of:

receiving at a broadcast receiver a broadcast media including information relating to goods and services that can be purchased by persons receiving the media;

receiving at the broadcast receiver a purchase request;

selectively recording purchase data at the broadcast receiver for a good and service that a person purchases relating to the broadcast media;

sending the purchase data from the broadcast receiver to at least one server; receiving the purchase data at the at least one server; and verifying the purchase data from the broadcast receiver at the least one server.

13. The method of claim 12, wherein:

the step of sending the purchase data is sending the purchase data to a plurality of servers; and

further comprising the step of storing the purchase data of one of the servers; and

wherein the step of verifying the purchase data occurs at a different server.

14. The method of claim 12, wherein the step of sending the purchase data is sending the purchase data from the broadcast receiver to the server via a secure communication channel.

15. The method of claim 12, further comprising the steps of:

storing the purchase data at the broadcast receiver; and

transmitting the stored data from the broadcast receiver to the server when the broadcast receiver is at a predetermined location.

16. The method of claim 12, further comprising the steps of:

storing the purchase data at the broadcast receiver; and

transmitting the stored data from the broadcast receiver to the server at a predetermined period of time.

17. The method of claim 12, wherein the step of receiving at a broadcast receiver a broadcast media receiver is receiving a radio signal at a radio receiver.

18. The method of claim 12, wherein the step of receiving at a broadcast receiver a broadcast media is receiving a broadcast media that includes information about the purchase of goods and services contained within the broadcast media.

19. The method of claim 12, wherein the step of receiving at a broadcast receiver a broadcast media is receiving a broadcast media that does not include information about the purchase of goods and services contained within the broadcast media.

## **Evidence Appendix**

Declaration of Walter E. Thain, Jr., Pursuant to 37 C.F.R. 1.132, dated June 19, 2006.

Pioneer "Inno" User Guide, dated 2006.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	EWALD	Group Art Unit:	3625
Serial No.	10/672,133	Examiner:	Smith, J.
Filed:	09/26/2003	Confirmation No.	6111
For:	SYSTEM AND METHOD FOR PURCHASING LINKED WITH BROADCAST MEDIA	Attorney Docket No.	49663.21740

**DECLARATION OF WALTER E. THAIN, JR., PURSUANT TO 37 C.F.R. §1.132**

I, Walter E. Thain, Jr., hereby declare and aver as follows:

1. I make this declaration of behalf of the Applicant. I am paid an hourly rate for my review of the materials of this application and present testimony, but otherwise have no affiliation with or financial interest in the Applicant, or financial or other interest in the eventual outcome of the present application.

2. I am an Associate Professor of Electrical Engineering Technology (ECET) at Southern Polytechnic State University (SPSU) in Marietta, Georgia. I have been an Assistant or Associate Professor at SPSU since August, 1997. I have a Bachelors Degree, Masters Degree, and Doctorate Degree in Electrical Engineering from the Georgia Institute of Technology.

3. I teach courses at graduate and undergraduate levels in the areas of wired and wireless communications systems, and computer networks and the Internet. While employed by private industry either full-time or as a part-time consultant, I have participated in electronic communications system development projects.

4. I am familiar with the patent application 10/672,133, by Applicant Ewald, and the patent application 09/867,687 by *Kesling, et. al.* I am also familiar with the Patent Examiner's decision regarding the claims of Ewald and position on the interpretation of *Kesling*, as well as the results of Appeal Number 2006-1365. I have been asked to render my evaluation as to whether the use and effect of the button 1220 in the portable radio 20 described in *Kesling* enables the purchase of goods or services immediately when pressed.

## **ANATOMY OF A PURCHASE TRANSACTION**

5. Before addressing the use and effect of the button 1220 in *Kesling*, it is important to examine the steps and operations that take place during a purchase transaction. The example used here is that of a typical retail store purchase; however, the same steps are required in an electronic purchase transaction. Below, I describe eight key steps that occur when a buyer makes a purchase at a retail store.

- i) The buyer indicates to the seller or the seller's employee (a cashier), that he wishes to start a purchase transaction. In a retail store, this is done by arriving at the cashier's station with the items to be purchased.
- ii) The buyer then identifies to the cashier the items to be purchased by placing them on the cashier's counter.
- iii) The seller (cashier) indicates a recognition or registration of the items to be purchased. This is done by actions such as picking them up to read the price, or scanning the item using a bar-code scanner. The latter enables the simultaneous retrieval of price from the store's inventory data base as well as the decrementing of the store's inventory totals.
- iv) The communication of the total cost of the purchase by the cashier to the buyer.
- v) The presentation of the means of purchase to the cashier by the buyer. In a retail store, this is usually the presentation of cash, a check, a credit card, or a debit card. The latter three essentially constitute a granting of permission by the buyer to the seller to access the buyer's checking or credit account for the purpose of debiting it by the amount of the sale. Also, the latter three means of purchase usually require the buyer to present a form of identification or authorization. Identification and authorization often includes, photo ID cards, verification of signature, or the buyer's entering of a personal identification number (PIN) to the terminal that records the buyer's credit- or debit-card number. The PIN is a unique secret code associated with the credit or debit card.

- vi) An acknowledgement by the seller (cashier) of the receipt of the buyer's means of payment. For a cash or check transaction, this is done when the cashier receives the cash or check in hand and enters the amount paid into the cash register followed by pressing a key on the cash register to initiate payment processing. For a credit- or debit-card transaction, the cashier waits until the buyer enters the credit- or debit-card number and PIN (if required) into the terminal and then presses a key on the cash register to initiate payment processing.
- vii) Processing of the payment. In the case of a cash or check payment, the processing is trivial and the cashier places the money or check in the cash register till, returning any change due and a paper receipt to the buyer. In the case of the credit- or debit-card payment, a third party entity is contacted when the cashier presses the button to initiate payment processing. The third party entity receives the buyer's identity and account information from the seller along with the amount of the sale, and then informs the seller as to whether or not enough funds are available in the checking account (in the case of a debit card) or available within the credit card limit to cover the purchase. The seller or third party entity will debit the buyer's account at the time of purchase or at some later time. The conveying of the buyer's identity and credit- or debit-card numbers to the third party is done over a secure electronic communication link, usually involving encryption (scrambling) of the number so as to make it impossible to determine the card number even if the transmission is intercepted. Once the third party verifies available funds to cover the purchase, the cashier gives a paper receipt to the buyer.
- viii) Release of the purchased items. Once the payment is complete and the cashier gives the buyer a receipt, the buyer is granted permission to take possession of the purchase items and remove them from the store.

6. Of these eight steps, clearly the most complex actions involve the processing of the buyer's debit- or credit-card number. These same actions also require attention to the buyer's privacy rights by all parties involved in the process. Systems designed to process such means of purchase are typically complex and sophisticated. I



have attached several references that illustrate types of debit- and credit-card payment processing systems and considerations in their design at a level of refinement at about the time of the *Kesling* application date.

7. Attached hereto as Exhibit A is S. Weinstein, Emerging Telecommunications Needs of the Card Industry, *IEEE Communications Magazine*, vol. 22, no. 7, July 1984. Weinstein gives several examples of debit- and credit-card payment system topologies employed circa 1983. The Internet was in its infancy at this time and communication between the point-of-sale terminal (or cash register in the above example) was typically made over dial-up lines or lines leased from the public telephone network. In 1983, encryption of the transaction data was beginning to be implemented for privacy and security purposes.

8. Attached hereto as Exhibit B is L. J. Camp and M. Sirbu, Critical Issues in Internet Commerce, *IEEE Communications Magazine*, vol. 35, no. 5, May, 1997. Camp and Sirbu discuss key issues in Internet commerce circa 1997, one of which is the increasing use of open, packet-switched networks to carry transaction traffic. Issues such as reliability, privacy, anonymity, and security are discussed.

9. Attached hereto as Exhibit C is U. S. Patent 5,850,442, issued December 15, 1998, to S. Muftic, titled "Secure World Wide Electronic Commerce Over An Open Network." Muftic describes a secure electronic commerce system. Security is provided in part by encryption of transmitted purchase transaction information using the public-key technique. One must note the complexity of the transaction system and processes included in Muftic's invention.

#### **ON THE USE AND EFFECT OF BUTTON 1220 IN KESLING'S RADIO 20**

10. It is my opinion that in order to enable the purchase of a good or service by the action of pressing button 1220 in radio 20, this one action must immediately cause to take place all eight of the steps and actions described in the example purchase transaction above. Further, since the button 1220 is located in a mobile radio 20, such a purchase transaction must take place over a combination wireless and wired electronic communication system. The last link between the communication system and radio 20 must be wireless as described in *Kesling*.

11. The system described in *Kesling* makes use of wired and wireless communication links depending on what actions are taking place and where the operator (listener or buyer) is located. [See e.g., Figs. 2 and 3 and Paragraphs 26 through 39 of *Kesling*] Those skilled in the art understand that such links are mere conveyers of information. The only processing of the original information to be communicated that occurs is that needed to facilitate the communication act along the communication path. This involves formatting the original information, converting it to a signal appropriate for transmitting on the chosen physical transmission medium, transmitting it across the physical medium, routing the information along the appropriate path, receiving the signal at the destination, and reformatting it into its original form at the destination. The actions of formatting information and converting it to appropriate signals for transmission usually include placing the information in digital data frames, or packets, then modulating a transmitter carrier signal with that information. At intermediate nodes along the path, the signal may be received, demodulated, re-modulated, and retransmitted as required by a particular communication link in the path. Finally, at the destination, the demodulation process includes the recovery of the original transmitted information. Apparatus along the communication link do not act upon the information being conveyed in the data frames other than using a limited amount associated with the physical communication process itself, such as routing addresses.

12. An electronic communication system itself, including the one described in *Kesling*, is not capable of the high-level processing needed to facilitate complex actions such as processing the payment information exchanged in a purchase transaction. To do that, computers running appropriate software applications along with data bases of stored records must be attached to the communications system at the end points.

13. In the system described by *Kesling*, one skilled in the art can see how radio 20 may be utilized to receive broadcast content containing program identifier information as described in paragraph 39 thereof. Further, one can also see how pressing button 1220 at an appropriate time will result in storing program identifier information in the storage media 1140. Also, it is apparent that the high-power wireless transmitter 700 and low-power wireless transmitter 600 included in radio 20 may be

used to form a communication link to convey information from radio 20 back to an entity or server elsewhere in *Kesling's* system. It is further apparent that pressing button 1220 can cause information to be sent over one or both of the radio 20 transmitters.

14. Considering the eight steps of a typical electronic purchase transaction, one sees that when a listener (buyer) presses button 1220 in radio 20, the system as described by *Kesling* can readily perform steps 1, 2, 3 and 4 immediately. However, the description of the system makes no mention that when button 1220 is pressed that there is communication of payment information (such as debit- and credit-card numbers) from the buyer to the seller. There is no mention that payment information (such as credit- and debit-card numbers) is stored in radio 20. Also, there is no mention that when button 1220 is pressed that there is any further processing of payment information and debiting of the buyer's account. Thus, neither steps 5, 6, 7, nor 8 take place when button 1220 is pressed. The process and actions involved in conveying payment information and completing a purchase transaction at the press of button 1220 would be complex and require a sophisticated method to properly and securely handle such information. Such a process and methodology are not described in *Kesling*.

15. Therefore, in my opinion, pressing button 1220 does not enable a complete purchase transaction in the system described by *Kesling*, as is suggested by the Patent Office.

I hereby declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Dated this 19<sup>th</sup> day of June, 2006, signed at Marietta, Georgia, U.S.A.

Walter E. Thain, Jr.  
Walter E. Thain, Jr.

# Emerging Telecommunications Needs of the Card Industry

Stephen B. Weinstein

Development and proliferation  
of the communications  
infrastructure for authorization  
and transaction processing  
capabilities

THE CARD INDUSTRY offers a wide range of payment system products and services, including credit and charge cards, automatic-teller machine networks, interchange networks, debit card systems, authorization and processing services, and point-of-sale equipment. The trend in the industry is to extend automation in the forms of both on-line and off-line transactional systems to a vastly increased number of points of sale and to personal terminals in business and home locations. To this end, the industry is increasingly interested in interchange among proprietary and industry networks, traffic concentration and other facilities sharing arrangements, conversion of voice traffic to data traffic, use of cable television and other local-loop bypass options, integration of public packet-switched networks with private networks, and enhanced transactional security and authentication.

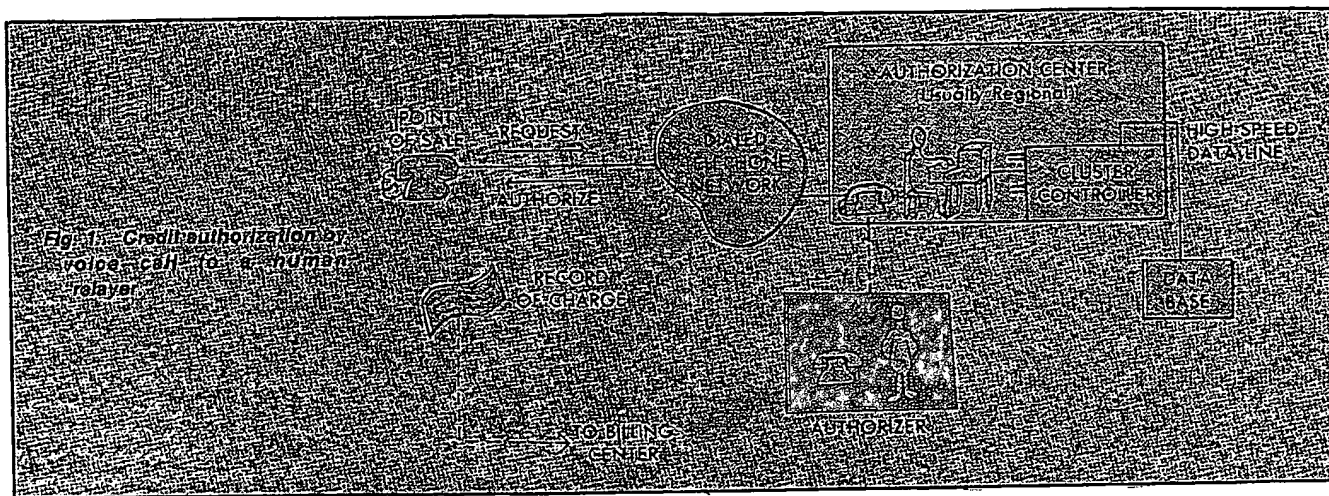
## Introduction

"Plastic money," in the form of credit cards, has existed as a widely used payment system for only 25 years, but hundreds of millions of cards are in use around the world. They give cardholders the privilege of paying later for goods purchased now, and the revolving credit loans automatically granted when payments are delayed beyond the first monthly billing are an important part of consumer credit. Credit card issuers, mainly banks and large retailers, earn income from three sources: a percentage "discount" in the remuneration of merchants, interest from revolving credit, and recently, from membership fees.

Other types of plastic money also exist, although not in quite such large quantities. The American Express and Diners' Club cards are examples of charge cards, similar to credit cards except for the absence of revolving credit. Issuers position charge cards as "travel and entertainment" payment media and ask higher merchant discount and card membership fees to make up for the absence of interest income. A third type of payment card, the debit card, automatically draws funds from an existing bank account, usually within one day. The cards used in automatic teller machines to obtain cash are debit cards and are perhaps the precursors of true electronic money at points of sale. The important difference between debit cards and the others, as far as operational systems are concerned, is that the instructions to transfer funds in debit systems are made by electronic communications instead of paper.

All three types of payment cards do share one very important telecommunications need: credit authorization. Credit authorization is a reference to a credit file, with or without the intercession of a human operator, to establish that the card is not stolen and that the cardholder can be expected to pay for the purchase. Credit authorization has been automated to the point that a purchase made in a distant country, at least one made through an automatic terminal, can be authorized in seconds from the card issuer's central data base. A vast array of proprietary, shared, and interconnected data networks has been created to service this need. The further development and proliferation of this data communications infrastructure, its accommodation of limited voice traffic, its containment of costs, its responsiveness to external pressures, and its evolution into broader transactional capabilities, particularly full electronic funds transfer, define the emerging telecommunications needs of the card industry.

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### On-Line Credit Authorization

The agreement between a merchant and a card issuer obligates the issuer to take responsibility for fraudulent or "bad credit" purchases only if the merchant calls into the issuer for credit authorizations. Actually, a merchant may be asked to call in only for authorization of purchases above a certain "floor" amount, especially if he is not equipped with an automatic data terminal and must use the telephone. Below the floor, the merchant is asked to use the printed "hot list." Because of the inadequacies of the hot list, card issuers want to automate lower-traffic points of sale with very-low-cost data communications and data terminals, thereby permitting on-line inquiries for virtually all card purchases. This drive for both universality and low cost determines the most fundamental and immediate telecommunications needs of the card industry. Some of the steps underway to meet these needs are described later.

As suggested above, credit authorization is carried out through a variety of telecommunications accessing methods. Figure 1 illustrates voice call-in to a "relayer" at an authorization center; the relayer is seated before a terminal which is in direct data communication with a central data base. Files are accessible to the relayer with a delay of no more than a few seconds. This service can be expensive because of its labor intensity and the cost of the telephone call from point of sale to authorization center.

An important additional operation is the "voice referral" made in about 5% of authorization calls to a human authorizer, an individual empowered to make credit decisions when the machine decision (from the data base) is ambiguous or the cardholder contests a rejection. The authorizer is ordinarily different from the relayer. Note also that funds transfer is handled separately, through use of paper records. Large retailers, such as airlines, may submit magnetic tapes of transaction records.

A second accessing method is via private-line data terminals on polled multipoint circuits connected directly to the authorization data base (Fig. 2). These terminals read the magnetic stripe on the back of a card and send the terminal's identification automatically, so that the sales clerk need only enter the purchase amount. This makes possible a very fast transaction, but is cost effective only at larger-volume locations. Card issuers have been taking steps toward regional concentration (Fig. 3) to reduce communications costs. Future

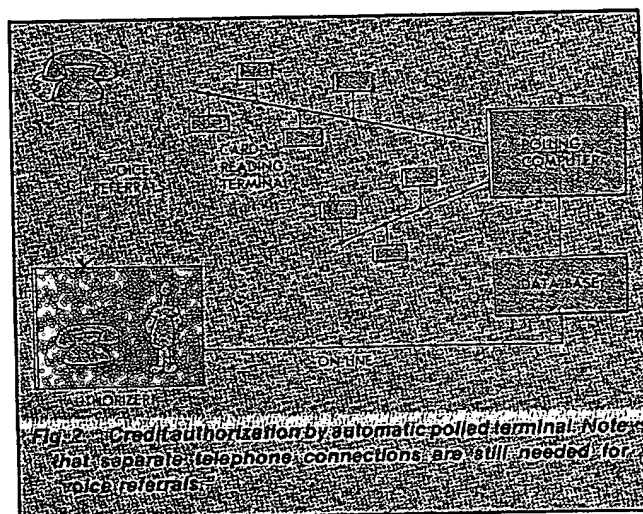


Fig. 2 Credit authorization by automatic polled terminal. Note that separate telephone connections are still needed for voice referrals.

communications strategies may emphasize access through public data networks and alternative local distribution facilities, as described later.

A third accessing method is via automatic *dialup* terminals which, like voice calls, use the switched telephone network

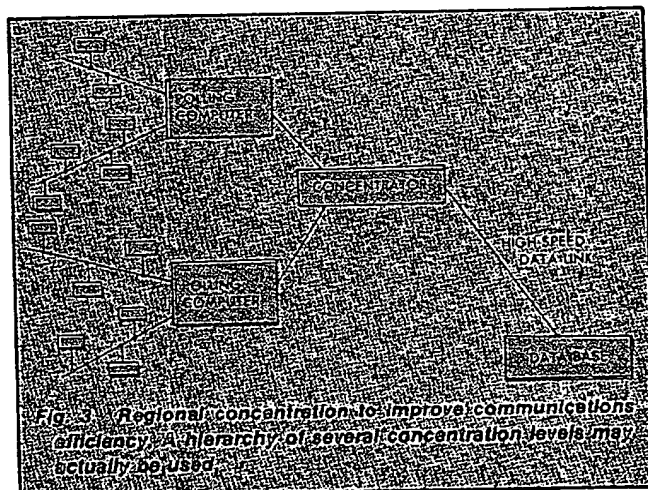
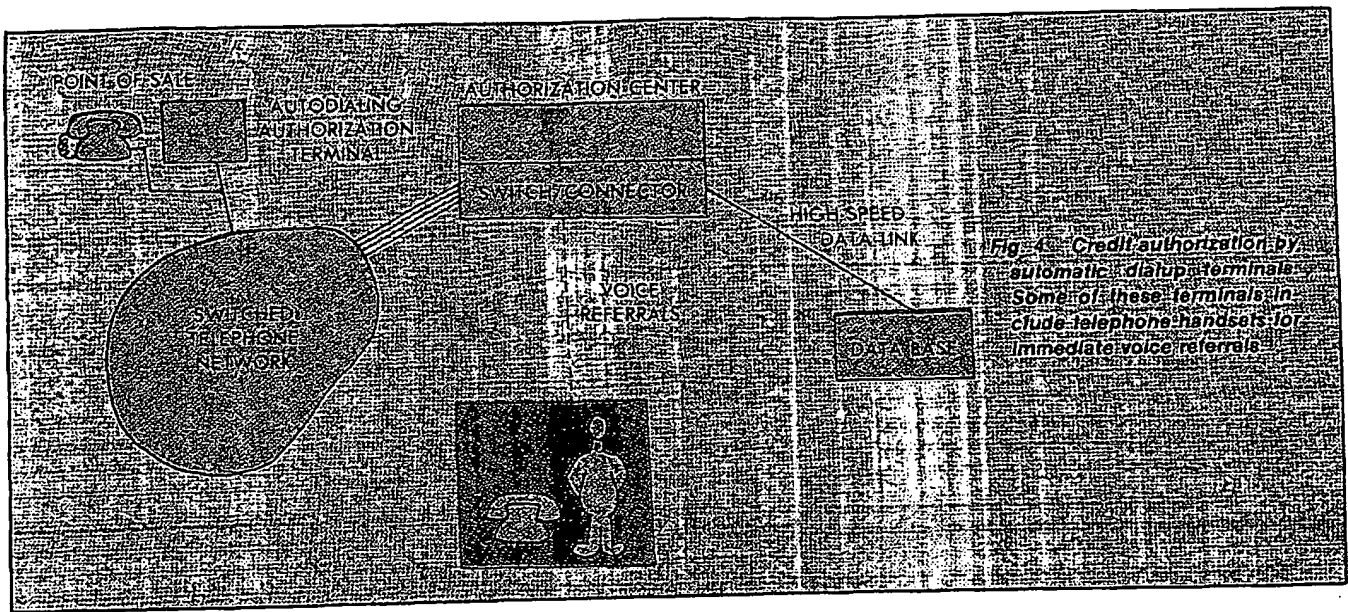


Fig. 3 Regional concentration to improve communications efficiency. A hierarchy of several concentration levels may actually be used.

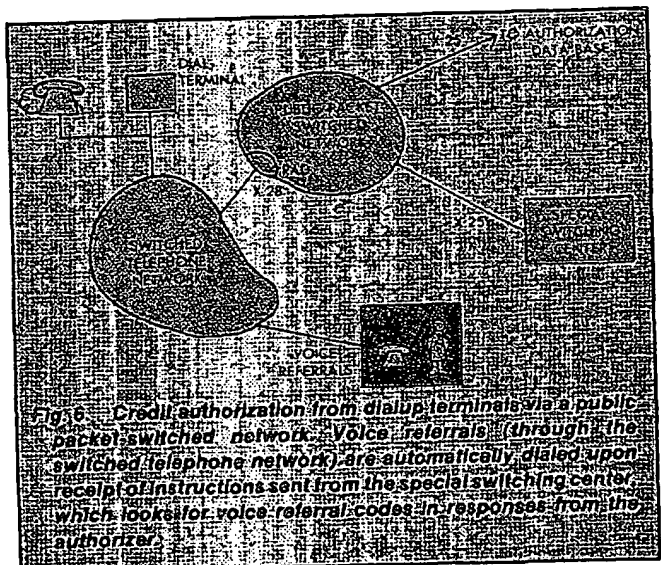
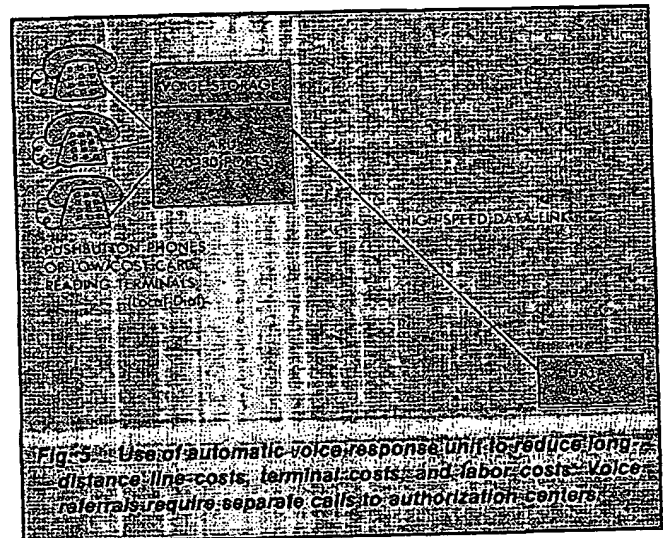


(Fig. 4). This accessing method is attractive for points of sale without sufficient traffic to support a private line terminal, especially with the recent development of moderate-cost (\$400) terminals complete with autodialers, modems, and magnetic stripe readers. If a telephone is available on the same line, voice referrals can usually be switched through the authorization center without a need for separate dialing.

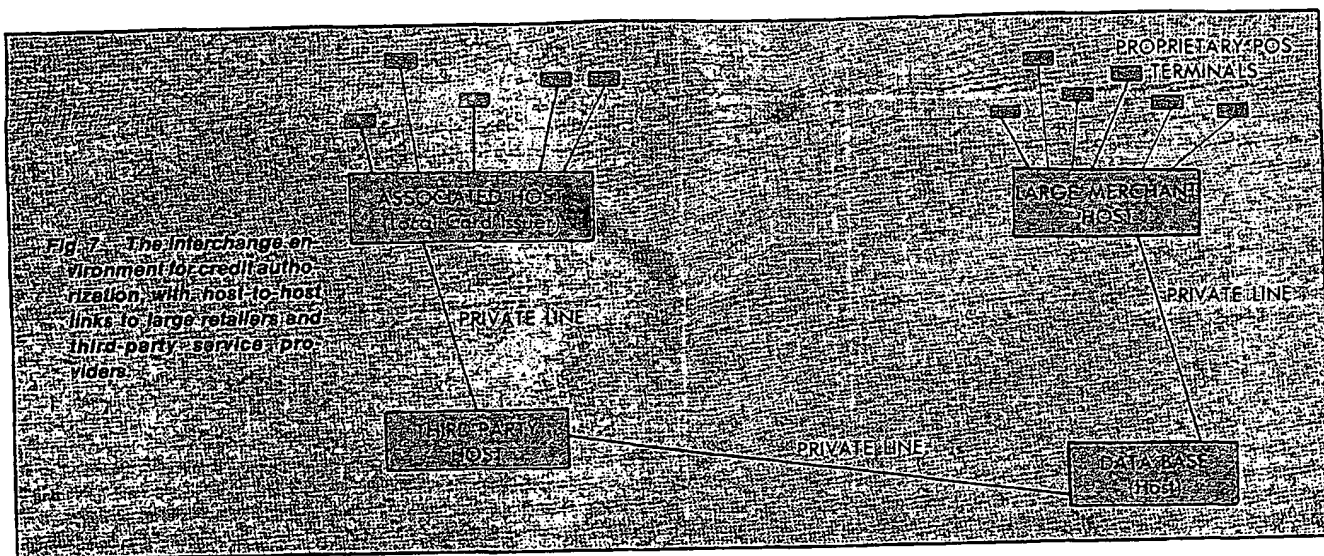
The largest push in point-of-sale automation is in deploying these low-cost dialup terminals. A number of ways to reduce the high costs of dialed lines, and even the moderate cost of dialup terminals, are being tested or considered, with emphasis on regional concentration of various kinds. One technique (Fig. 5) is the use of automatic voice response units (ARU's), which are accessed by local phone calls from very-low-cost terminals, including pushbutton telephones, and concentrate data traffic for transmission to the distant data base. Canned voice prompts are provided to the calling sales clerks. Another technique (Fig. 6), increasingly used in Europe where national PTT's encourage the use of public data networks, is tandem connection through the dialed network and the public packet-switched network, with voice referrals automatically dialed by the point-of-sale terminal in response to instructions from special facilities monitoring the data traffic. The shared facilities of the packet-switched network are appropriate for the short, bursty traffic characteristic of credit authorization, but the need to provide occasional voice referral communications might be better met in a future integration of voice with data traffic.

#### Interchange and Shared Facilities

A fourth accessing method is via interchange (Fig. 7) with other institutions, including large retailers supporting their own point-of-sale systems and "third parties" providing interchange services. The rationale for interchange is, of course, to broaden the communications reach and terminal population for a particular card without that card issuer having to invest in additional facilities. Developing an interchange relationship requires some software development for the conversion of message formats and communications protocols, but it is more a business than a technical question. The

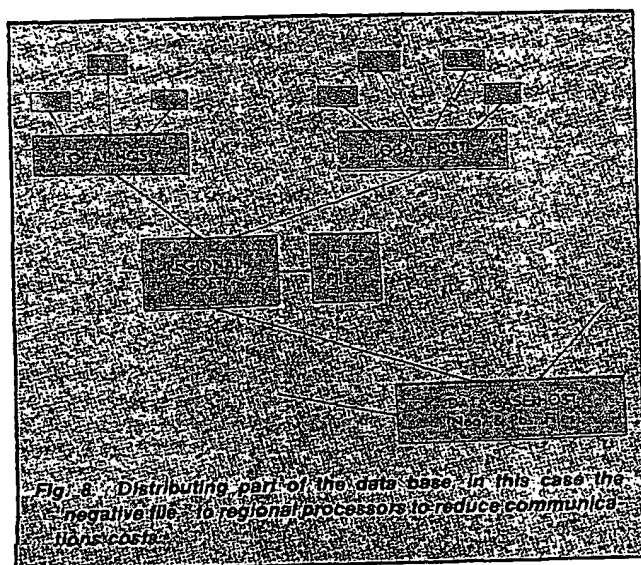






communications needs are for dedicated computer-to-computer links, typically operated at 2.4 kb/s to 9.6 kb/s, and for appropriate backup facilities, dialed or private.

One interesting development seen in both proprietary and interchange environments, but particularly the latter, is truncation of communications through the use of distributed data files. An authorization data base will usually contain a "negative file" of bad cards, equivalent to the printed "hot list," which is clearly much smaller than the full "positive files" on all cardholders which constitute the bulk of the data base. This negative file can be distributed to regional processors (Fig. 8), so that calls for authorization on purchases with "bad" cards can be answered from the regional processor (with a rejection message) instead of from the distant full data base. In the interchange environment, this means that one card issuer may be housing and using data bases on cardholders of other issuers, illustrating the delicate balance between competition and cooperation which appears to be characteristic of communications-intensive businesses, and is, perhaps, creating new needs for privacy safeguards.



Optimization of credit authorization and other transactional networks with respect to the division between communications and distributed data basing and processing is one of the central problems of transactional networking, and one of the most interesting technically. It depends critically on technical and regulatory developments in the communications industry and on developments in memory and data-base technology. If communications costs increase and data storage and processing costs continue to decrease, data storage and processing functions may be replicated in local host computers or even in terminals themselves. A cheap, rewritable memory of several megabytes for use in transactional terminals can be considered a "need" of the card industry in the sense of opening up broader possibilities for decentralization of data access and processing functions.

One of the most striking recent developments in transactional interchange is the advent of the nationwide automatic teller machine (ATM) interchange network. Several competing networks are in fact being developed. This is a true, if not quite complete, electronic funds transfer (EFT) application at the personal level, with individuals using their "cash cards" to obtain cash at ATM's of banks other than their home banks.

As Fig. 9 illustrates, the ATM interchange network conveys identification information and an authorization request from the user to the host computer of his home bank. If this host computer is convinced of the identity of the user, conveyed through a personal identification number (PIN), an authorization for the transaction is returned to the host computer supporting the ATM. The reconciliation between the two banks is handled in a separate bulk transaction.

Network security becomes an important issue in this application. If the PIN is not encrypted for its transit through the network, or if the authorization message is not protected, the system becomes susceptible to fraud by both passive and active interceptors. "Good practice" now suggests link-by-link DES encryption for the PIN (as indicated in Fig. 9), but not all participating institutions are convinced of the need for security.

However, link-by-link encryption, with its stored keys and reencryption points, is weaker than end-to-end encryption with a unique "session key" for each transactional session. A pressing need of future personal EFT networks, including

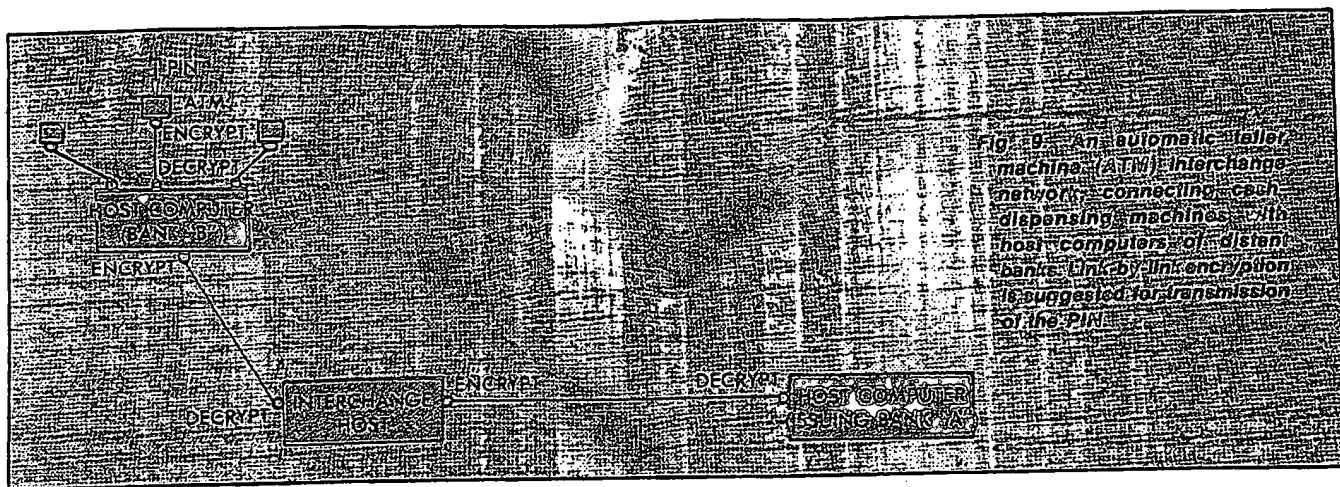


Fig. 9. An automatic teller machine (ATM) interchange network connecting cash dispensing machines with host computers of distant banks. Link-by-link encryption is suggested for transmission of the PIN.

"home banking" networks, is effective, simple, and cheap security and authentication technology. In fact, the whole phenomenon of transactional interchange networks invites new attacks on the integrity and privacy of personal and institutional data files which must be met with new technical safeguards.

#### New Media and the On-Line—Off-Line Choice

The efforts at data concentration described earlier (automatic voice response, regional concentrators, stored data networks) still leave the requirements for local communications. The card industry needs to hold down communications costs and improve performance in the local as well as the long-distance arena, but it has not made very much progress so far. Digital subscriber loops, as in the integrated services digital network (ISDN) or some of its forerunners, have the potential to offer faster exchanges at lower cost and satisfy some of the anticipated needs. Digital access will be particularly welcome if it does indeed integrate voice with data communications, carrying voice referrals through the same

digital facilities with instantaneous increases (as requested) in assigned capacity.

Cable systems may also provide a local-loop bypass option, although interactive cable services are developing much more slowly than anticipated. The relatively low-capacity polling schemes used in some interactive cable systems may be able, in some locations, to support a population of transactional terminals. Unfortunately, CATV is usually not supplied to businesses, and transactional services alone may not justify the installation costs. And, even when cable is installed, it may be best to use its inherent efficiency as a *broadcast* medium to update remotely distributed credit files rather than to carry interactive traffic.

Other communications media have also been suggested, including low-rate two-way satellite communications between ATM's and host computers using spread-spectrum transmission techniques [1]. Microwave digital termination services may also be useful local distribution media. There is, in any event, a need to develop better local communications facilities for transactional communications.

A somewhat different view of transactional communications is taken by advocates of off-line rather than on-line commu-

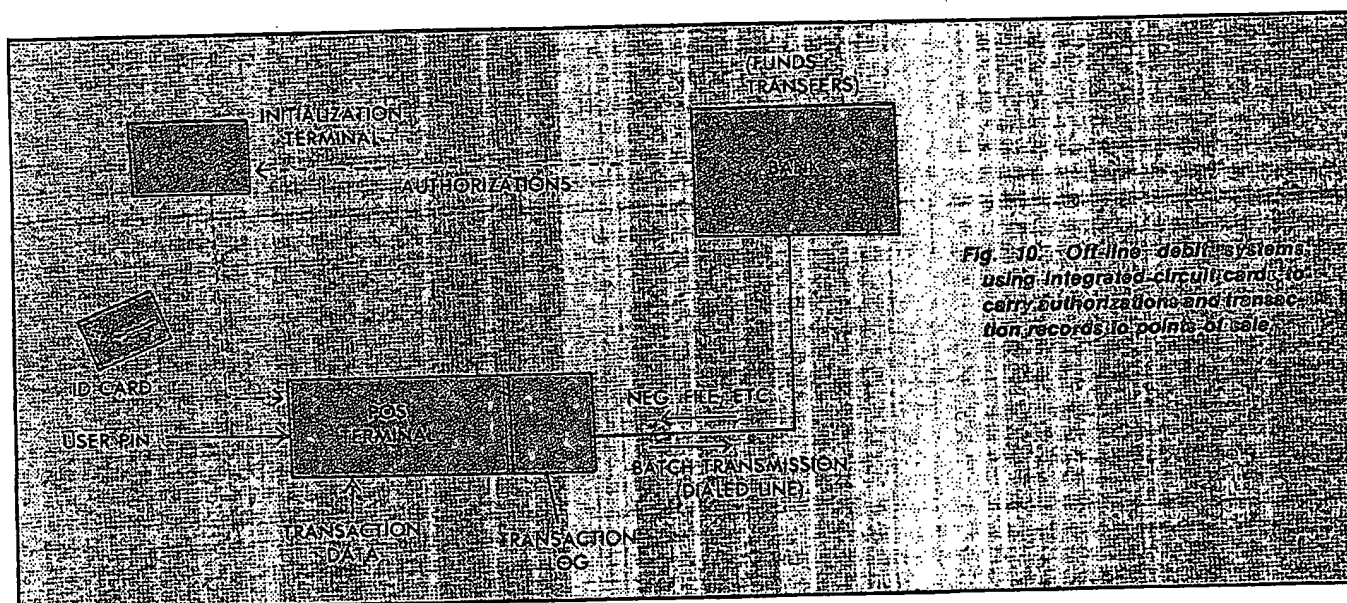


Fig. 10. Off-line debit systems using integrated-circuit cards to carry authorizations and transaction records to points of sale.



nications systems, particularly off-line systems using integrated circuit ("smart" or "chip") cards. In a debit system based on these cards (Fig. 10), credit authorization is granted on the strength of the authorization and transaction records in the customer's card and there is no call to a distant data base. Transaction records are also retained by the (off-line) point-of-sale terminal, which periodically transfers them in a batch transmission, through a dialed connection, to a clearing institution. A greater penetration of low-volume points of sale may be obtained with such an off-line system than with a conventional on-line system.

#### The Essential Telecommunications Needs of the Card Industry

The foregoing review of what the card industry does with telecommunications, and what it would like to do, has suggested a number of needs which enhanced telecommunications might help meet:

- 1) Lower cost per transaction.
- 2) Automation of smaller points of sale.
- 3) Facilities sharing and interchange to increase reach and restrain costs.
- 4) Minimization of voice traffic, and integration with data traffic.
- 5) Effective use of public data facilities.
- 6) Security and authentication techniques appropriate for EFT and for data-base privacy and integrity despite easier access.

- 7) More choice among communications alternatives, especially for local communications.
- 8) Serious consideration of distributed vs. central data management, and of (partly) off-line vs. on-line communications.

#### Acknowledgment

The author is indebted to a number of individuals in the credit card industry for their knowledge and advice.

#### Reference

- [1] Private communication from Equatorial Communications Co., Inc.

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Stephen B. Weinstein, born in New York City in 1938, received degrees in Electrical Engineering from M.I.T. (S.B. 1960), the University of Michigan (M.S. 1962), and the University of California Laboratories in Eindhoven, the Netherlands, he joined Bell Laboratories in Holmdel, NJ, where his work was largely in voiceband data communications.

In 1979, Dr. Weinstein left Bell Laboratories for a subsidiary of the American Express Company, Payment Systems, Inc., transferring in 1980 to the Office of Corporate Development and Planning of the parent company, where he advises management on technical issues.

Dr. Weinstein, an IEEE Fellow, is a member of the Board of Governors of the IEEE Communications Society and is the new editor-in-chief of *IEEE Communications Magazine*. He recently completed a three-year term as chairman of the editorial board of the IEEE Press. ■

## ABSTRACT

In this article the authors identify reliability, privacy, and security as critical issues in electronic commerce. In other work, designers of information systems have identified other issues as critical, such as the ability to provide offline verification. It is widely agreed that an electronic currency system must provide divisibility, scalability in number of users, conservation of money or tamper resistance, exchangeability or interoperability, and availability [1-6]. However, by returning to the fundamental definition of money and the essential nature of electronic information systems, the authors argue that privacy, reliability, and security are also critical issues. It is argued that these issues are particularly important in Internet commerce. The authors conclude by noting how some proposed Internet commerce systems provide, or fail to provide, security, reliability, and privacy.

# Critical Issues in Internet Commerce

*L. Jean Camp, Sandia National Laboratories*

*Marvin Sirbu, Carnegie Mellon University*

Internet commerce is sending electronic payments over a public network to obtain electronic goods or commitments to deliver physical goods. Internet commerce will bring together consumers and merchants in transactions that cross jurisdictional boundaries on a scale that was previously as inconceivable as it was technically infeasible. In transactions that cross national boundaries, many questions which are now answered through force of law, such as consumer liability for a lost credit card number, may now be addressed through technical fiat. In this article we determine the critical policy issues which are being addressed at the design level by beginning with the basic properties of money. We will focus on the dominant issues in the design of electronic commerce systems: privacy and fraud.

Crucial questions in Internet transactions are: What can customers, merchants, and banks lose on the Internet? Who must they trust? And who takes the risks?

Answers to these questions vary across the multitude of proposed protocols for electronic commerce on the Internet. However, an examination of a broad range of these protocols makes clear that in electronic commerce, customers can lose both their money and their privacy. To protect privacy and money, Internet transactions must be secure, reliable, and anonymous.

Reliability and security are interdependent. The lack of reliability of an electronic commerce system can be exploited by attackers to commit theft. Reliability in electronic commerce may require security to provide authentication, integrity, and irrefutability. Reliability is not security. Reliable protocols on servers that are not secure will provide reliable services to attackers as well as to authorized users.

Privacy, anonymity, and security are distinct but interdependent properties. Privacy means that the subject of information can control the information. Privacy requires security, since security is control over information. However, security is not sufficient for privacy, since the owner and the subject of the information may have very different interests in and uses for the data. In fact, security may preclude privacy by ensuring that the subjects of information have neither control nor knowledge of the uses of that information. Anonymity means

that information has no subject — that is, identity is not linked to the information. Thus, anonymity ensures privacy.

Obviously, security is necessary for the protection of both user funds and user privacy. However, security alone can protect neither.

Unlike surveillance threats, with anonymous currency illegal acts can be simplified. Risks of anonymous currency include transmitting threats and receiving related ransom anonymously, anonymous blackmail, tax evasion, and trivial money laundering.

We do not attempt to address every possible risk inherent in electronic commerce. It is already apparent that the advent of electronic funds transfer can magnify the weaknesses of cash control systems [7, 8] or entail unnecessarily detailed information gathering that threatens individual privacy laws [9-12].

## WHY INTERNET COMMERCE?

Why the Internet? Why will commerce thrive on the Internet rather than in easier-to-manage intranets? Who is out there?

What is the Internet? And who is out there? The Internet began as the ARPANET, a United States government project for connecting scientific research sites. As late as 1986, when ARPANET became NSFNET and expanded its mission, the Internet community was dominated by researchers and scientists. It was not until 1990 that the first commercial e-mail provider, MCI Mail, was connected to NSFNET. But in the '90s, commercial information providers came onto the Internet along with commercial e-mail providers. Early adopters of Internet technology for information marketing include Dow Jones and Dialog [13]. Thus began Internet commerce. Since 1990 the growth of the Internet has been exponential. The growth of hosts on seven continents from the Internet Domain Survey [14] is shown in Table 1. It is these growth curves that so excite the providers of content and commerce services.

In 1989 Tim Berners-Lee developed a protocol to enhance data sharing for collaborative physics, the hypertext transport protocol (http). This protocol is the underlying technology for the World Wide Web. The Web allows consumers to search

for information on the Internet with a straightforward graphical interface. Easy access to information has been a significant driver of Web growth. With http, the Internet became fully capable of supporting user-friendly distributed commerce, just as previous protocols had enabled functionality from simple communication to file transmission. The Web remains a critical element in emerging electronic markets.

Certainly the obvious answer to the question, "Why Internet commerce?" is "That's where the customers are." The other answer is that Internet commerce offers the potential to greatly reduce transactional overhead. Many successful business ventures are now on the Internet. Table 2 shows examples of businesses on the Internet and corresponding paper information markets [15].

The Internet supports a range of business functions, not simply payment. Every transaction has multiple phases: product discovery, price negotiation, final selection, payment, delivery, and dispute resolution. The Internet can support many types and all stages of Internet commerce [16].

Product discovery is enabled on the Internet through advertising and electronic word of mouth. Product information is dispersed through Web pages, distribution lists, and Usenet groups. The Web enables individuals to locate specific information and search by product or company name. Corporate Web sites often exist solely for the purpose of distributing product information with a simple graphical interface. With distribution lists, or dlists, individuals who have a common interest form a closed group and transmit messages of interest to all members of this group. Announcements of new products are made by members of the dlist.

All the technologies consumers use to find out about services can also be used to locate suppliers. Web search engines, such as the hotbot and Lycos, also provide a simple way for consumers with Web access to locate products.

Price negotiation is supported by e-mail and electronic data interchange. Information goods can be delivered online. Customer support can be offered online through e-mail and via Web pages.

Every phase of a commercial transaction has associated

Region	Hosts, 1/94	Hosts, 1/95	Hosts, 1/96	Hosts, 1/97
North America	1,685,715	3,372,551	7,088,754	11,216,035
Europe West	550,933	1,039,192	2,699,559	4,352,152
Europe East	19,867	46,129	168,142	784,225
Middle East	6946	13,776	44,484	58,930
Africa	10,951	27,130	84,715	104,838
Asia	81,355	151,773	672,495	106,664
Pacific	113,482	192,390	475,505	647,948

■ Table 1. Regional growth on the Internet.

Market structure	Electronic example	Paper example
Publisher pays	Web catalogs	Mail order catalogs
Advertiser pays	Lycos, Yahoo	Free weekly papers
Club pays	Clarinet, site license software	Corporate library
Customer subscription	Web magazines, dlists	Professional magazines
Customers pay per item	First Virtual	Storefront sales
Customers pay for time	AOL, CompuServe	Rental items
Mixed ads and customer payment	Prodigy, Netscape business sites	Newspaper

■ Table 2. Structure of information markets (dlists: distribution lists).

costs. The ability of an Internet commerce protocol to reduce transaction costs depends on its ability to address these costs. For comparison, the distribution of costs in a credit card transaction is shown in Fig. 1 [16].

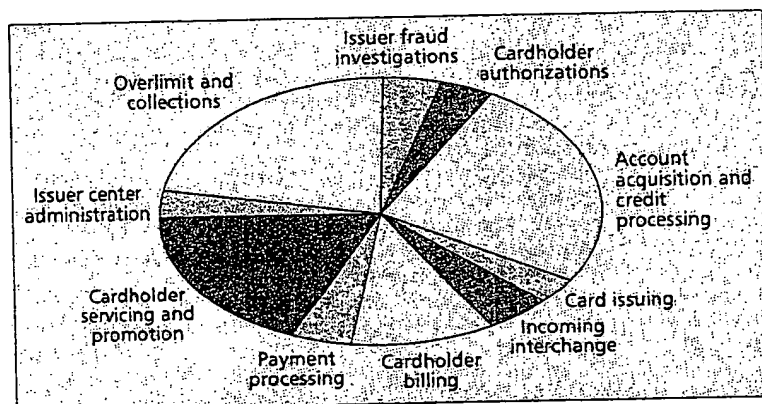
The value of Internet commerce partially depends on how the costs in the figure can be decreased through automation. The Internet allows administration of customer orders, payment or payment authorization transmission, and production of an invoice to be automated.

In addition to cost advantages through automation, the Internet allows services to be provided continuously, around the clock, around the globe, in multiple languages and currencies. Catalogs of merchandise can be found by interested shoppers at negligible marginal cost to the merchant. The catalogs seen by every consumer can be updated immediately as prices and inventory changes.

Internet commerce could affect the lives of millions. The standards which determine how money and information flow around the Internet are being determined now — and some of the fundamental decisions about the risks consumers will take are integrated as technical details in technical specifications. Examination of those specifications and enumeration of the risk are particularly timely while Internet commerce is yet infant and the standards are still in flux.

## MONEY, ITS FUNCTIONS, AND ELECTRONIC COMMERCE

Here we will answer two related questions: Why are reliable transactions important? And what are the properties of a reliable electronic commerce protocol? To answer these questions, we must first address a more basic



■ Figure 1. Cost distribution in a credit card transaction.

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*Unlike physical money, electronic money is merely bits, and thus can be trivially duplicated so that money can be stored in multiple locations.*

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issue: What is money? Defined by its three elemental functions, money is a store of value, a standard of value, and a medium of exchange [17]. Money as a medium of exchange requires reliability in transactions, and providing transactional reliability in electronic commerce is not trivial.

Money as a store of value requires durable storage. For money to be a store of value, it must not be easy to destroy or create. If money decays or is destroyed in storage, it obviously does not succeed in storing value. In contrast, hyperinflation illustrates the failure of money as a store of value when it can too easily be created. Under hyperinflation, entire nations are forced to abandon money and return to barter.

Durable storage is necessary for electronic commerce. Unlike physical money, electronic money is merely bits, and thus can be trivially duplicated so that money can be stored in multiple locations. Note that this duplication of money differs from the creation of money only when the duplicates cannot be spent; thus, ease of duplication is a double-edged sword. Furthermore, some electronic currency systems have money that expires in order to reduce the cost of a security violation. Thus, value of stored money, though not the bits themselves, could effectively disappear.

Money as a standard of value requires *interoperability*<sup>1</sup> that is, to serve as a standard of value, any specific form of money must be either itself widely used (a standard) or readily convertible to a standard form. In the electronic environment, interoperability in terms of wide use means that a protocol can be implemented on many and diverse platforms. This type of interoperability is encouraged by open standards. Low requirements for participation in electronic commerce also encourage interoperability through wide use, by expanding the base of possible customers. Restrictions on participation have the reverse effect. For example, the requirement that electronic commerce customers have a credit card [18] prohibits the participation of anyone without a credit history and significant income.

Interoperability in terms of convertibility means different vendors' software can exchange data; in electronic commerce, converting money amounts to exchanging data. Interoperability is not an insurmountable issue, since even systems that are not secure [19] can provide interoperability.

Money as a medium of exchange requires special transactional properties. The transactional properties that enable money to serve as a medium of exchange amount to transactional reliability. Therein lies the answer to our initial question: why are reliable transactions important? Reliable transactions in electronic commerce are important because they are necessary to the proper functioning of electronic money as a medium of exchange.

Reliable protocols can provide certainty in the face of network failures, memory losses, and electronic adversaries. An unreliable electronic commerce system cannot distinguish a communications failure from an attack. If a failure can be used effectively for theft, then certainly such attacks will occur.

There remains, then, the second question: what are the properties of a reliable electronic commerce protocol? The study of distributed databases has defined the characteristics of reliable database transactions as atomicity, consistency, isolation, and durability. These are known as the *ACID* properties. Physical transfers of money illustrate the *ACID*

properties of a reliable transaction. *ACID* properties are innate in exchanges of physical money.

*ACID* transactions are atomic, consistent, isolated, and durable. Distributed *ACID* transactions are robust and can prevail in the face of network outages, replay attacks, failures of local hardware, and errors of human users [20].

Transactions are *atomic* in the Newtonian sense; they cannot be split into discrete parts. An atomic transaction either fails completely or succeeds completely. Funds are conserved in an atomic transaction. For example, consider what happens when a customer transfers funds from a savings account to a checking account. Either the checking account is credited and the savings account is debited, or neither account balance changes. There is no case where money either disappears from both accounts or is credited to both accounts.

If a transaction is *consistent*, all relevant parties agree on critical facts of the exchange. If a customer makes a one-dollar purchase, then the merchant, the customer, and the bank (if it is involved) all agree that the customer has one less dollar and the merchant one more.

Transactions that do not interfere with each other are *isolated*. The result of a set of overlapping transactions must be equivalent to some sequence of those transactions executed in nonconcurrent serial order. If a customer makes two one-dollar transactions, the two payments should not be confused. The customer should not end up being charged twice for one item, nor should one single payment be counted twice to give the two-dollar total.

When any transaction can recover to its last consistent state, it is *durable*. For example, if the customer physically drops a dollar when making a purchase, that dollar does not disappear. When the customer retrieves the dollar, the last consistent state is restored. Similarly, money that was available to a computer before it crashed should not disappear when the machine reboots.

Atomicity, consistency, durability, and isolation in a transaction create the possibility for irrefutability in electronic commerce. Suppose a customer wants to make a purchase from the local software store. The customer must pay, or promise to pay. The merchant either gets payment or proof of intent to pay in a standard purchase order or check. The customer gets a receipt from the merchant indicating that she has paid and expects the merchandise to be delivered. When it is delivered, the customer signs a receipt for the merchant indicating delivery has occurred. Each action is linked with some verification of action, so both parties have some proof in case the other party attempts fraud.

Electronic commerce systems have widely varying scopes, some covering only payment, while some address everything from negotiation to delivery. Different electronic commerce systems offer different degrees of atomicity to address the problems of remote purchases: money atomicity, goods atomicity, and certified delivery [21].

Of course, electronic transactions may have no atomicity. No atomicity requires mutual trust among participants. The physical equivalent is sending cash or goods in the mail to a post office box. Customer or merchant fraud can be simple in systems with no atomicity.

Electronic transactions may have money atomicity. The physical equivalent is paying cash in person. In money-atomic systems there is no mechanism for certification of merchandise delivery. If used for remote purchase with accepted techniques for the delivery of physical goods, money atomicity is quite adequate. But fraud, through a customer's theft of

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<sup>1</sup> This does not imply interoperability in the software engineering sense

*Under the standard Transmission Control Protocol (TCP), a payment may be duplicated when the communications protocol believes the packet containing the payment message was lost on the network. Moreover, a payment message may be destroyed by network failure.*

goods or a merchant's refusal to deliver goods after payment, can be trivial when systems with only money atomicity are used for goods with online delivery, such as software. Among the systems here, both anonymous credit cards [4] and Secure Electronic Transactions have money atomicity [18].

Electronic transactions may have goods atomicity. Goods atomicity corresponds to using a certifiable payment mechanism with certified delivery in a physical transaction. Goods atomicity provides high reliability and reduces the opportunity for merchant fraud. Goods atomicity is the equivalent of collect on delivery. The merchant is not paid unless there is a delivery; the customer does not pay unless there is a delivery.

Finally, electronic commerce systems may provide certified delivery. With certified delivery the customer certifies to the merchant his intent to order goods of a certain description, and the merchant warrants that what the customer received is what the merchant intended to deliver. While a decision as to whether what was delivered actually matches what was ordered is a semantic judgment, the ability to verify these items after the fact provides a powerful mechanism to ensure that the customer receives precisely what was agreed upon. NetBill offers certified delivery.

Atomicity depends on design, implementation, and business policy. Atomicity depends on funds-available policies because of rollback. Rollback is a technique where all steps are recorded and then reversed until the most recent consistent state is reached. For example, if a customer's attempt to transfer funds from checking to savings fails, funds withdrawn from the customer's checking account are placed back into the customer's checking account.

In electronic commerce, a payment message must travel over an open network, which is not secure, from the customer to the merchant. Without verifiable acknowledgment in the protocol, the customer will not know that the merchant received the payment message. Under the standard Transmission Control Protocol (TCP), a payment may be duplicated when the communications protocol believes the packet containing the payment message was lost on the network. Moreover, a payment message may be destroyed by network failure. If a payment message is lost, delayed, or destroyed, confusion rather than consistency may result.

Note that financial transactions as well as database transactions can also be classified as reliable using these properties. In some systems the financial transaction consists of one distributed database transaction, so in this case the application of these concepts is trivial. In other systems a single financial transaction requires multiple database transactions. In this case the failure of individual messages may require state changes in multiple database transactions for the financial transaction to remain atomic, since the scope of the financial transaction includes multiple database transactions. In short, transactional reliability is not a trivial matter in electronic commerce.

Rollback is complicated when financial transactions consist of multiple database transactions. For example, suppose a customer orders a free ticket as a frequent flyer award and includes a credit card number to pay for the courier charge. If the entire fare is mistakenly charged to the card, rollback is possible. However, it requires coordinating three databases: the airline frequent flyer database, the airline billing database, and the billing database of the credit card company. This is obviously more complex in computing and organizational overhead than

simply redepositing unused funds at a single institution.

Superficially, electronic transactions are just exchanges of bits, and if the exchange can be reversed, the transaction can be made atomic. But for Internet commerce to expand, there must be some interoperability not only between forms of Internet commerce but also between Internet currency and traditional forms of money. Therefore, if the rollback period is too large

the fraudulent party could abscond with unrecoverable cash, making the later acquisition of bits meaningless. This implies that a transaction which implements atomicity using rollback, and is theoretically atomic, may not be truly atomic. Using two-phase commit solves this problem by requiring that the record or funds are locked until global commit is issued. (At the point of global commit, all parties agree that the transaction has been completed.) This implies that for rollback to be useful, funds should remain locked until commit so that the money cannot be converted in the interim.

Providing customer anonymity is another critical issue. In physical exchanges of money, maintaining customer anonymity is trivial. The merchant present at the transaction may gather some information about the customer through direct observation, but no unique identifying information is recorded and stored as a result of the transaction itself, and no identifying information can be correlated with the purchase. In contrast, electronic commerce is fundamentally the manipulation of computerized records. Purchase information, including customer identity, is easily correlated across electronic transactions.

Issues of atomicity and anonymity are complicated by the definition of the scope of a transaction. When does a transaction begin? When does it end? What is the relevant scope of concern in a transaction? The information transmitted in a transaction varies if the transaction includes discovery, where the information available to the merchant depends on the Web browser used by the customer, or if the transaction includes only the purchase of the goods. As illustrated in the previous discussions of atomicity, the degree of atomicity depends on the scope of the transaction as well.

Currently published token currencies have not considered entire transactions, and therefore do not provide money atomicity. Token currencies illustrate the possible trade-off between atomicity and anonymity suggested in the discussion of rollback.

Digicash [22] is the canonical anonymous currency. Yet Digicash has no atomicity [23]. In the later version of Digicash, [24], Chaum attempted to provide money atomicity, through encoding identity into each token to be spent. Encoding identity allows double-senders to be identified, thereby resolving the conflict between anonymity and accountability in the case of double spending. The addition of integrity provides sufficient information for dispute resolution in issues of payment, but not enough information to resolve disputes over goods delivery.

MicroMint [25], which uses hashing rather than public key operations to affordably generate large quantities of electronic cash, offers no money atomicity in its simplest form. In order to provide money atomicity, MicroMint is extended so that customer identity is included in every coin. Thus, the extension of MicroMint to provide money atomicity depends on the requirement that every consumer identify herself to the merchant to verify her right to spend a coin.

Similarly, an analysis of protocols for Internet commerce

## The designers of electronic commerce systems are implementing their values as well as their engineering creativity into the financial infrastructure.

based on notational currency illustrates that reliability can be simplified by creating a single ledger. The creation of a single ledger means that there is a concentration of information, thus implying a threat to privacy. The Anonymous Credit Card protocol attempts to address this by accepting the increased complexity as the cost of privacy. However, the relationship between distribution of information and provision of privacy does not always hold true in that increased centralization does not always imply decreased privacy. NetBill, for example, has more centralized transaction processing than Secure Electronic Transactions but provides an equivalent level of customer privacy.

### CLOSING

In summary, the designers of electronic commerce systems are implementing their values as well as their engineering creativity into the financial infrastructure. In some cases the trade-offs made by the designers is explicit, as in MicroMint. However, in some cases the trade-offs result from adherence to previous models (as with SET) or are based on an implicit assumption that anonymity is worth the price of fraud (as with Digicash). In all cases, the policy choices and value decisions should be made in an open and democratic way rather than by quiet technical fiat.

Today the decision of whether to allow an electronic commerce offering is made in a regulatory cloud. Providers of electronic commerce are currently allowed to make spurious claims of anonymity, as in the case of Mondex [26]. Consumers and citizens are not given the information necessary to select electronic commerce systems that reflect their own preferences, with marginal costs, susceptibility to fraud, and desire for privacy all clearly defined.

Of course, some requirements for consumer identity are based on outdated regulatory models of records and are not under the control of system designers. Legal requirements for receipts, billing, contracts, and nonrepudiation do not reflect the potential for anonymous atomic systems or other technological capabilities. However, even with legal considerations, much remains in the hands of system designers.

We would argue that the Code of Fair Information Practice should apply to all transactions; in particular, consumers should know of records as they are being created and be able to opt out. Just as companies offering credit are required to explain the charges, designers and companies offering electronic commerce software should be required to explain what information about the user is made available.

Currently, electronic commerce system designers are choosing the risks consumers take between their wallets and their privacy. These decisions are inherently value-laden, and should be made with the recognition that issues of fraud and privacy cannot be addressed through post hoc regulatory solutions on the Global Information Infrastructure.

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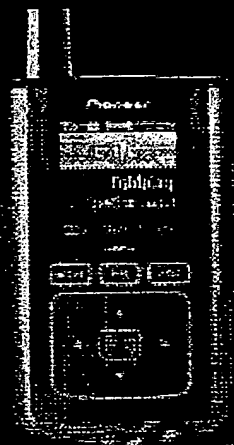
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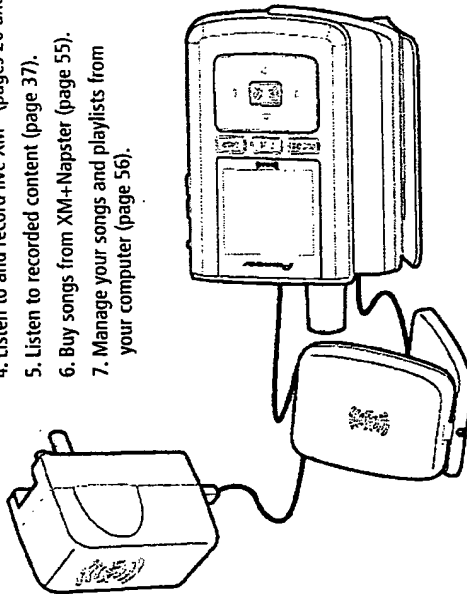
# user guide

**XM2go** Portable Satellite Radio with MP3



## Quick Start

1. Charge battery for at least 8 hours (page 12).
2. Set up your inno™ (page 20).
3. Activate your XM subscription (page 18).
4. Listen to and record live XM\* (pages 26 and 33).
5. Listen to recorded content (page 37).
6. Buy songs from XM+Napster (page 55).
7. Manage your songs and playlists from your computer (page 56).



\*Hardware and required monthly subscription sold separately. Recorded music not for use in commercial establishments. Installation cost and other fees and taxes, including a one-time activation fee may apply. Subscription fee is consumer only. XM products, programming, services, and fees are subject to change, at any time, without notice. Channels with frequent explicit language are indicated with an XL Channel blocking is available for XM radio receivers by calling 1-800-XM-RADIO. Subscriptions subject to Customer Agreement available at xmradio.com. XM service only available in the 48 contiguous United States. ©2006 XM Satellite Radio Inc. All rights reserved.

## Contents

Introduction .....	4	Organizing Your Music .....	56
Features .....	4	Disconnecting Your inno From the PC .....	60
Safety Instructions .....	7	Listening to XM Radio Online (XMRO) .....	61
What's in the Box .....	10	Using Your CDs or MP3/WMA Files .....	62
Charging the Battery .....	12	Updating inno Firmware .....	64
Inno Controls .....	13	Using XM+Napster .....	64
Using this Guide .....	15	Using the Update Tool .....	65
Inno Display .....	16	Using the Web .....	65
Remote .....	17	Settings .....	66
Subscribing to XM .....	18	FM Modulator .....	66
Using Your inno Alone .....	20	Aiming the Antenna .....	69
Setup .....	20	Audio .....	70
Live XM .....	26	Display .....	71
TuneSelect™ .....	29	Channel Access .....	73
Info Extras .....	31	Clock and Sleep Timer .....	75
Recording XM .....	33	Vehicle Mode .....	76
Listening to Recorded XM Content (My Music) .....	37	Memory Partition .....	77
Organizing Your Music .....	38	Restoring Factory Defaults .....	78
Using inno with a PC .....	48	Customer Support .....	80
System Requirements .....	48	Troubleshooting .....	80
Setup .....	49	Specifications .....	83
Registering with XM+Napster .....	51	Patent Information .....	85
What Can You Do with XM+Napster? .....	54	FCC Statement .....	86
Exploring .....	54	Warranty .....	88
Purchasing Music .....	55		



## Features

Congratulations on your purchase of the Pioneer inno™. It's the next-generation XM2go® radio, with an XM receiver, built-in antenna, and storage for XM, MP3, or WMA music files in one portable device.

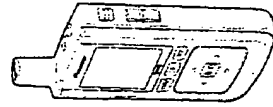
Enjoy XM's 160 channels from coast to coast, with over 80,000 hours of entertainment each month. XM offers musical choice, variety, and discovery – worlds beyond your own collection – plus a wide range of news, sports, talk, comedy, kids, and entertainment channels. Hear XM live, or save XM programming on your inno to listen at your leisure.

We've also teamed up with Napster, a leading provider of online music. Imagine discovering a new artist on XM and then, with just a few clicks of a mouse, buying high-fidelity tracks and albums by that artist and similar artists. It's that simple.

Manage all your music – XM tracks, songs you purchase from Napster, and MP3/WMA files you rip from your CDs – with the easy-to-use XM+Napster program on your Microsoft® Windows® PC.

One device, all the music you could ever hope for, and the easiest way to find the music you want – now that's a music experience!

We recommend that you read the entire manual before using your inno.

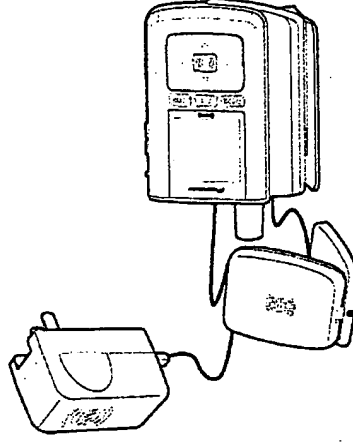


## inno™, Undocked

- Listen to live and recorded XM\* content
- Play MP3 and WMA files
- Manage your tracks, favorite channels, and playlists
- Listen on the go

## inno + Dock + Antenna

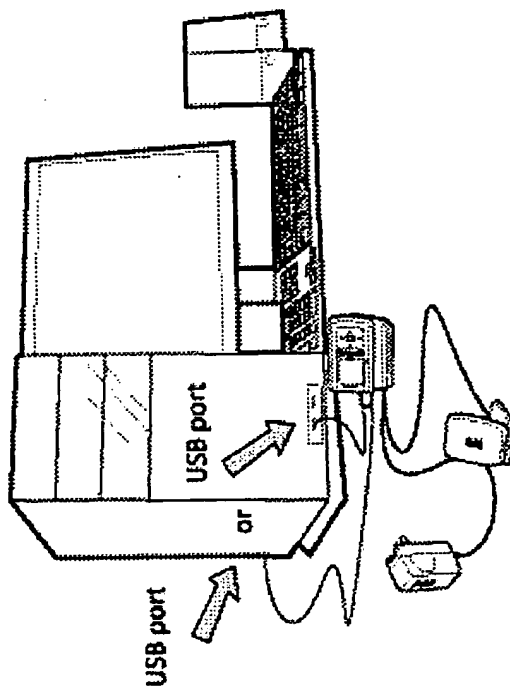
- Listen to live and recorded XM\* content
- Play MP3 and WMA files
- Manage your tracks, favorite channels, and playlists
- Listen in your car or home



\*Hardware and required monthly subscription sold separately. Recorded music not for use in commercial establishments. Installation cost and other fees and taxes, including a one-time activation fee may apply. Subscription fee is consumer only. XM products, programming, services, and fees are subject to change, at any time without notice. Channels with frequent explicit language are indicated with an XL. Channel blocking is available for XM radio receivers by calling 1-800-XM-RADIO. Subscriptions subject to Customer Agreement available at xmradio.com. XM service only available in the 48 contiguous United States. ©2006 XM Satellite Radio Inc. All rights reserved.

## inno + Dock + Antenna + PC

- Manage content using inno or your PC
- Listen to XM Radio Online
- Purchase music from XM+Napster and upload it to your inno



## Safety Instructions

*Please read and understand all the instructions to avoid injury to yourself and/or damage to your inno. Please be aware that Pioneer claims no responsibility for damage from data loss due to breakdown, repair, or other causes.*

### inno Digital Audio Player

- Do not expose to extreme temperatures (above 140°F or below -4°F, or above 60°C or below -20°C).
- Do not expose to moisture. Do not use inno near or in water.
- Do not let any foreign matter spill into inno.
- Do not expose to chemicals such as benzene and thinners. Do not use liquid or aerosol cleaners. Clean with a soft damp cloth only.
- Do not expose to direct sunlight, fire, flame or other heat sources for a prolonged period.
- Do not try to disassemble and/or repair inno yourself.
- Do not drop your inno or subject it to severe impact.
- Do not place heavy objects on inno.
- Do not subject inno to excessive pressure.
- Do not touch the inno with wet hands.
- Do not store in dusty areas.

**▲ WARNING:** Handling the cord on this product or cords associated with accessories sold with the product will expose you to lead, a chemical known to the State of California and other governmental entities to cause cancer and birth defects or other reproductive harm. **Wash hands after handling.**

# Introduction

## Battery Charger Safety

**Caution:** Opening the case may result in electric shock.

**Caution:** The uninsulated parts inside the power adapter and dock may cause electric shock or fire. For your safety, please do not open these components. Do not let metallic objects, such as necklaces or coins, come into contact with the power adapter plugs or battery terminal.

**Caution:** To avoid electric shock, use the power adapter only with an outlet that matches the shape of the adapter's plug.

**Caution:** Make sure that you insert the adapter's plug all the way into the outlet.

**Caution:** Do not plug several devices into the same electrical outlet.

**Important:** Always read and understand the user guide to prevent problems.

**Warning:** Use the power adapter and dock away from water sources to avoid fire or electric shock.

## Environmental Information

Follow local guidelines for waste disposal when discarding packaging, batteries, and electronic appliances.

Your player is packaged with cardboard, polyethylene, etc., and does not contain any unnecessary materials.

## Earbuds and Headphones

Follow traffic safety instructions.

Do not use earbuds or headphones while operating a bicycle, automobile, or motorcycle. Not only is it dangerous, it may be prohibited by law in some areas.

For your safety, make sure the earbud or headphone cable does not get in the way of your arm or other surrounding objects while you're walking or exercising.

# Introduction

## Protect Your Ears

Maintain a moderate volume when walking or exercising, so that you can be aware of what is happening around you.

Using earbuds or headphones for an extended time can cause serious damage to your hearing.

We strongly advise you to set the volume level to medium, which is usually less than 2/3 of the maximum.

If you hear ringing in your ear(s), lower the volume or stop using the earbuds or headphones.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing. Set your equipment at a safe level BEFORE your hearing adapts.

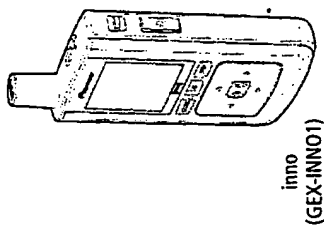
To establish a safer level: Start your volume control at a low setting. Slowly increase the sound until you can hear it comfortably and clearly, without distortion.

Once you have established a comfortable sound level: Set the dial and leave it there; taking a minute to do this now will help to preserve hearing.

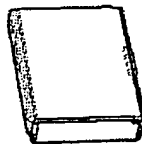
Pioneer and the Consumer Electronics Association recommend you avoid prolonged exposure to excessive noise. Under constant exposure such as sustained listening, sound levels above 85 decibels can be dangerous without hearing protection. (For reference, a garbage disposal or loud shouting at 3 feet away are around 80 decibels; a food blender or gas lawn mower at 3 feet away are around 90 decibels.) The longer your exposure and/or higher the sound level, the greater the danger of permanent hearing damage. Pioneer disclaims all liability for hearing loss, bodily injury or property damage as a result of use or misuse of this product.

**WARNING:** Inno should be placed in your vehicle where it will not interfere with the function of safety features, e.g., deployment of airbags. Failure to correctly place Inno may result in injury to you or others if the unit becomes detached during an accident and/or obstructs the deployment of an airbag.

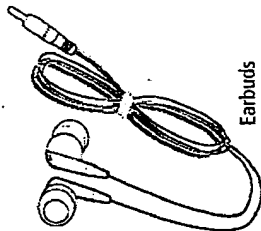
## What's in the Box



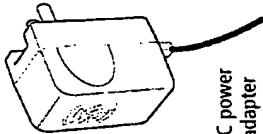
inno  
(GEX-INNO1)



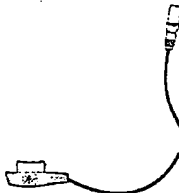
Battery



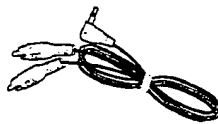
Earbuds



AC power  
adapter

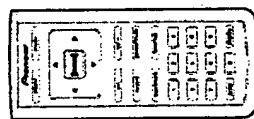


Travel power  
cable

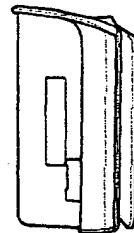


RCA audio cable

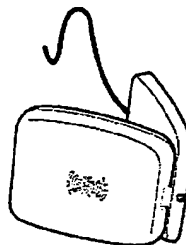
ENG



Remote



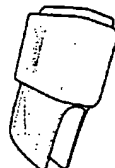
Home dock



Home XM antenna



USB cable

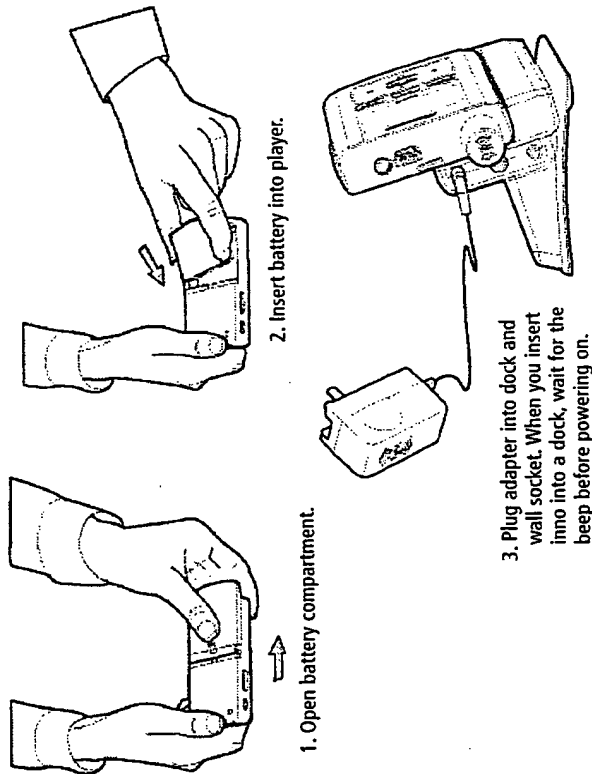


Carrying  
case/holster

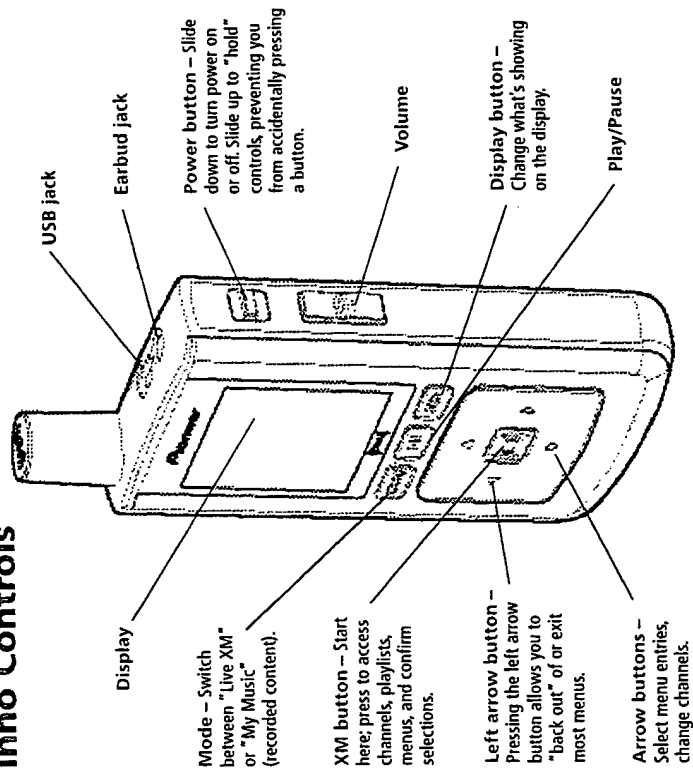
Also included:  
User guide  
XM+Napster install CD

## Charging the Battery

Charge the battery for at least 8 hours before using inno for the first time, or if you have not used it for several months. Be sure to charge the battery in a place where the temperature is between 32°F and 113°F (0°C to 45°C).

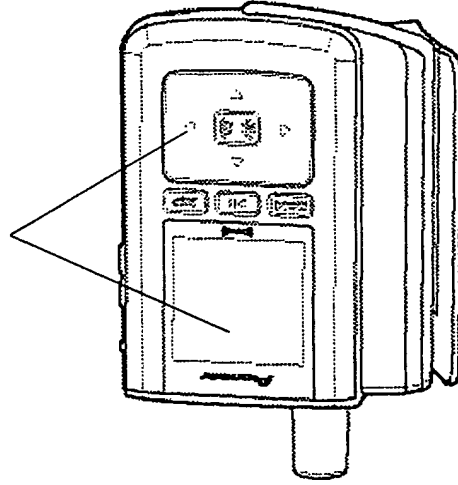


## inno Controls



## inno Controls

When you put inno in its home dock, both the display and arrow buttons rotate by 90° so that "up" really points up!



## Using This Guide

Throughout this guide, you will see instructions such as "Select XM → Settings → Setup → Antenna Aiming." This tells you to perform the following actions:

1. Press the XM button.
2. You will see a menu whose last option is "Settings." Press the down arrow button several times to highlight "Settings," then press the XM button to select it.
3. You will see another menu whose third option is "Setup." Again, press the down arrow button to highlight "Setup," and press the XM button to select it.
4. You will see another menu; one of the options is "Antenna Aiming." Press the down arrow button to highlight "Antenna Aiming," and the XM button to select it.

Not all of the menu items described in this guide may appear on your inno display. For example, if you have not created any playlists, you will not see "Playlists" if you press the XM button while listening to "My Music."

**NOTE:** In most instances, pressing the left arrow button allows you to "back out" of any menu.

## inno Display

Available memory or signal strength – Green portion indicates amount of storage taken up by locked XM songs (page 40). In "Live XM" mode, you will see a signal strength indicator instead.

Indicates XM channel, playlist or MP3 genre.



Progress bar – Shows total track length and current location within a track while playing songs in "My Music."

Battery charge

Mode – ((XM)) shows you're listening to live XM. ((My Music)) shows you're listening to stored XM content or MP3/WMA tracks.

H – "H" indicates that the power switch is set in the "hold" position.

Clock

Channel number

Artist name

Song title

### Additional symbols:

	play		track assigned to a playlist
	reverse or fast-forward through track		PC track assigned to a playlist
	pause		XM track is locked
	skip to previous or next track		repeat track
	PC track (MP3 or WMA file)		play tracks randomly

## Remote

Power button

Left arrow button – Pressing the left arrow button allows you to "back out" of or exit most menus.

Volume

Record – Record a song or channel.

Bookmark – Tag interesting songs or tracks.

Numeric keypad – Select XM channels by channel number.

Mode – "Live XM" or "My Music" (recorded content).

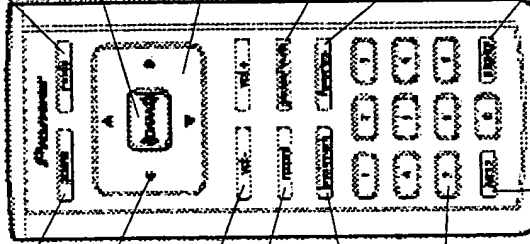
XM button – Access menus and confirm selections.

Arrow buttons – Select menu entries, change channels.

Pause/Mute – Pause playback or mute live XM.

Favorites – Go to favorite channels.

Display – Change what's showing on the display.



Jump – Switch to previous channel you listened to.

## Subscribing to XM

*Before you can listen to or record XM content, you must activate your inno.*

1. Set up your inno, dock station, power adapter, and antenna (page 20 or page 22). Make sure inno can receive the XM signal.
2. Place inno in the "Live XM" mode (page 26).
3. Find the 8-character XM Radio ID, which is printed on the package or in the battery compartment underneath the battery. Or select XM channel 0 to view the Radio ID. Record the Radio ID here for reference:

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

The XM Radio ID does not use the letters I, O, S, or F.

4. Activate your XM Satellite Radio service online at <http://activate.xmradio.com> or by calling 1-800-XM-RADIO (1-800-967-2346). You will need a major credit card.

XM will send a signal from the satellites to activate the full channel lineup. Activation normally takes 10 to 15 minutes, but during peak busy periods you may need to keep your player on for up to an hour. When you can access the full channel lineup on your inno, you're finished!

**Product registration**  
Visit us at the following site:

<http://www.innovations.com>

1. Register your product. We will keep the details of your purchase on file to help you refer to this information in the event of an insurance claim such as loss or theft.
2. Receive updates on the latest products and technologies.
3. Download owner's manuals, order product catalogues, research new products, and much more.

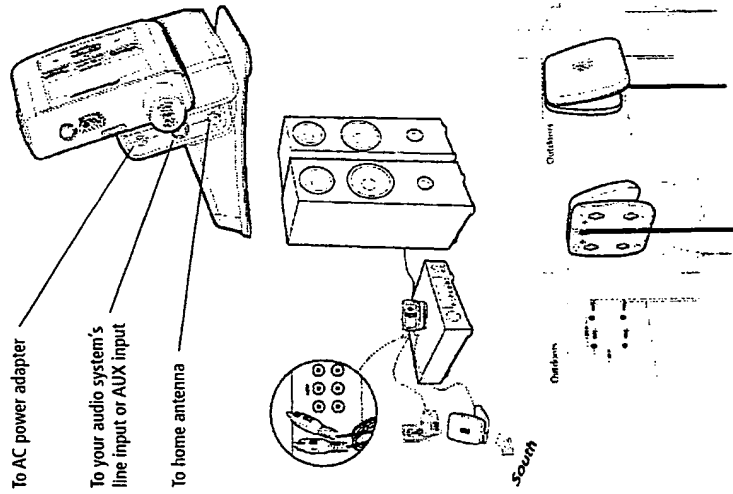
**▲ IMPORTANT (Serial Number)** The serial number of this device is located on the back of this unit. For your own security and convenience, be sure to record this number on the enclosed warranty card.



## Using Your inno Alone

### Setup At Home

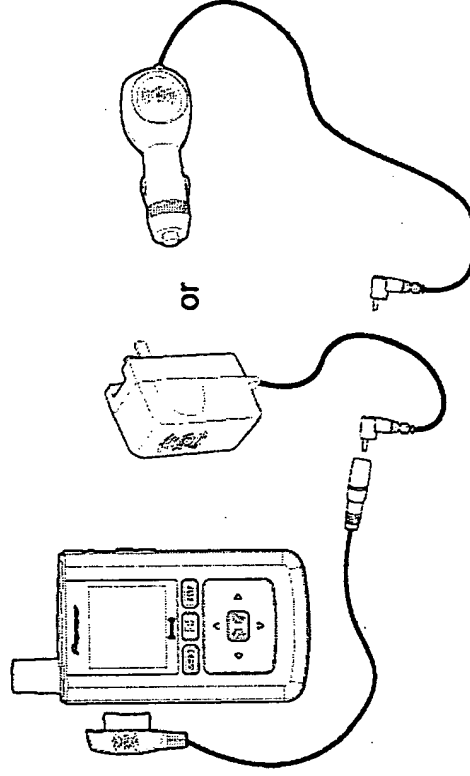
1. Insert inno into home dock.
2. Connect inno to your audio system as shown. If your audio system does not have a line-level input, use inno's built-in FM transmitter (page 66). Connect power adapter and home antenna. Point antenna toward the southern sky through a window.
3. To optimize signal reception, you may mount the home antenna outdoors, home antenna outdoors, facing south. Make sure the antenna is not blocked by buildings or trees.



## Using Your inno Alone

### While Traveling

If you're traveling, you can connect the power adapter directly to inno using the travel power cable.



## Using Your inno Alone

### Setup

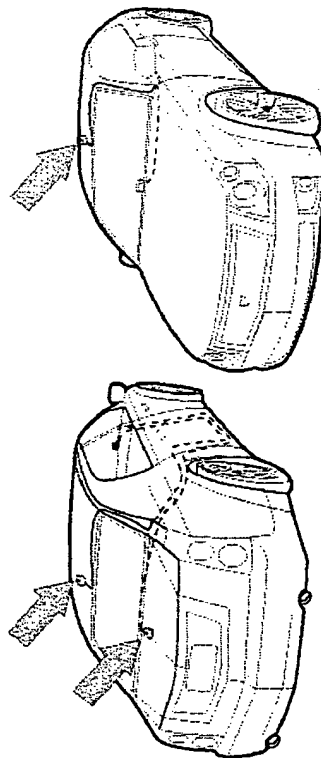
#### In a Vehicle

(requires Car Accessory Kit CD-INCAR1, sold separately)

*Every vehicle is different; for your safety, follow all instructions carefully. Consult a professional installer if you have questions.*

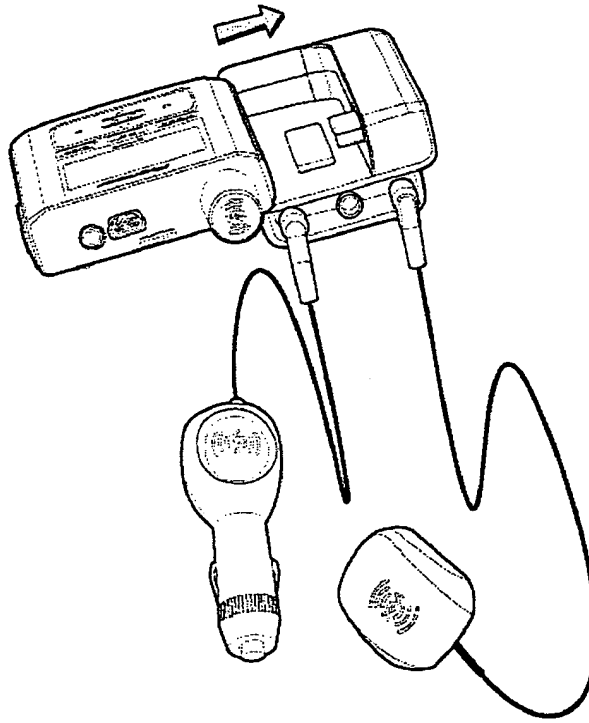
You can listen to your inno through your car stereo by using inno's built-in FM transmitter. Simply find an unused FM frequency on the stereo and set inno to transmit on that same frequency.

1. Mount antenna to the roof or trunk of the vehicle. During installation, make sure you are outdoors and the antenna is not obstructed by tall buildings.



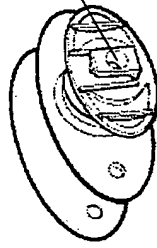
2. Insert inno into car dock.

3. Connect car dock to antenna cable and power adapter.



## Using Your inno Alone

- To install the swivel mount, first find a suitable location. The swivel mount's adhesive is very strong and may be difficult to remove. Do not install this mount on leather surfaces and make sure the air temperature is at least 60°F (15°C).  
Clean the mounting surfaces with the surface preparation kit. Peel away the adhesive liner and firmly press the swivel mount to the surface for 30 seconds. Allow 24 hours before using the mount.

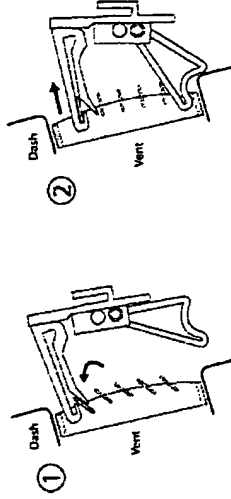


You can adjust the tension of the mount with a screwdriver.

If you need to remove the mount, carefully lift the adhesive pad with your fingers or a spoon. Warming with a hair dryer for several minutes will help soften the adhesive.

## Using Your inno Alone

- To install the vent mount, find a horizontal vent that is strong enough to hold your inno and dock. To remove the vent mount, push it into the vent and lift upwards slightly to release the mount's hooks from the vent vane.

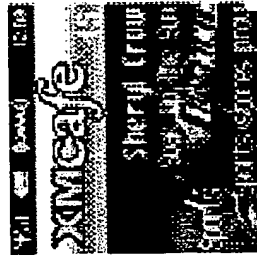


- Find an unused FM frequency on your car stereo.
- Set your inno to the same FM frequency. (Refer to the section marked "Settings," "FM Frequency.")
- Tune inno to XM channel 1. You should be able to hear XM through your car stereo.

## Using Your inno Alone

### Live XM

**NOTE:** You must receive a live XM signal for at least 8 hours a month (which may be split over several listening sessions). This authenticates your XM subscription and ensures that you can continue to enjoy your recorded XM content and live XM programming. If you do not dock your inno as described, you will lose access to your recorded content and live XM programming.



Turn on your inno. Subscribe to XM (page 18) if you haven't done so already.

If you see "XM" at the top of the display, you're listening to XM content that is currently being broadcast from the satellites.

If you see "My Music" on the display, you're listening to recorded XM or MP3/WMA tracks. Press the **Mode** button to switch to "Live XM."

## Using Your inno Alone

### Selecting Channels

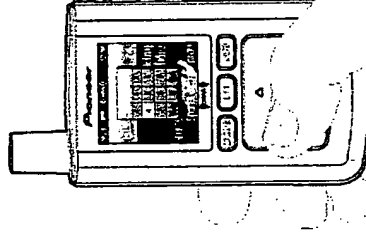
Press the up or down arrow buttons to scroll through the list of channels.

- OR -

Press the number keys on the remote that correspond to the channel number.

- OR -

1. Press the left arrow button on your inno. You will see a virtual keypad on the display.
2. Use the arrow buttons to select the digits corresponding to the channel number. Press the **XM** button after highlighting each digit.
3. When you've entered a valid channel number, your inno will tune to that channel within 2 seconds.



## Using Your inno Alone

### Favorite Channels

You can save your favorite channels in an easily accessible list.

1. While you're tuned to a channel, press the **XM** button.
2. Select **Favorites** → **Add Channel**.
3. Once you've saved your favorites, you can quickly access the list. From the "Live XM" screen, simply press the right arrow button to see your "Favorites" list. Press the up and down arrow buttons, then the **XM** button to select the desired channel.
4. To remove a channel from the "Favorites" list, select **XM** → **Favorites** → **Edit Channels** → (channel name) → **Remove Channel**.

### Categories

XM channels are organized into categories, or genres, such as "Rock," "Jazz," or "News."

To find a channel by category:

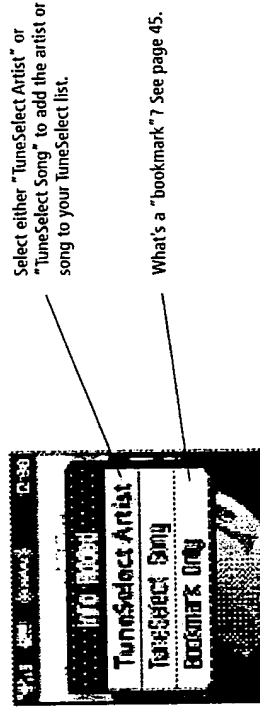
1. Press the right arrow button one or more times. The category name appears in the display. "Favorites" is your first category if you have designated any channel as a "favorite channel."
2. When you've found the category you want, press the up or down arrow buttons to select a channel.
3. Press the **XM** button to tune to that channel.

## Using Your inno Alone

### TuneSelect™

TuneSelect™ finds your favorite artist or song whenever they're currently being played on any XM channel.

1. When you hear one of your favorite songs, select **XM** → **Bookmark**.
2. You should see the following menu:



3. When any song or artist on your TuneSelect list is currently playing on any other XM channel, inno will beep and flash "Artist/Song Found" on the display. Switch to that channel by pressing the **XM** button.
4. To edit the TuneSelect list, select **XM** → **Settings** → **Preferences** → **TuneSelect** → **Edit List**. Choose song or artist and follow the directions on the display.
5. To turn TuneSelect on or off, select **XM** → **Settings** → **Preferences** → **TuneSelect** → **Alert** and choose the desired setting.

## Using Your inno Alone

TuneSelect also allows you to type an artist name or song title even if the song isn't currently playing on your inno.

1. Select **XM** → **Settings** → **Preferences** → **TuneSelect** → **Edit List** → **Add TuneSelect**.
2. Press the up or down arrow buttons to choose the artist or song title field.
3. Press the **XM** button. You will see a virtual keyboard. Type in the artist name or song title.
4. Select "Enter" when you're finished, or select "Exit" to cancel.
5. Select "Accept" to add that name or title to your TuneSelect list. You can also select "Change" or "Cancel."

**NOTE:** The artist name and song title fields are case-sensitive.

## Info Extras

XM Satellite Radio broadcasts information such as sports scores, stocks, and other features from time to time.

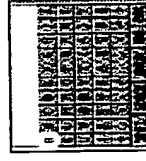
To Choose Sports or Teams:

1. Select **XM** → **Settings** → **Preferences** → **Info Extras** → **Sports**.
2. Use the arrow buttons to highlight (in yellow) a sport or team.
3. Press the **XM** button to select that sport or team. The name of the sport or team will turn green.
4. You may select more than one sport or team to display. Your chosen selections are shown in blue. To remove a selection, go to that entry and press the **XM** button; the entry will change color from blue to gray.
5. When you're finished, press the left arrow button repeatedly until you return to the normal display. Or just wait several seconds for inno to return to its home screen automatically.

To Select Stocks\*:

1. Press **XM** → **Settings** → **Preferences** → **Info Extras** → **Stock Ticker** → **Add Stocks**.
2. You should see a virtual keyboard that will allow you to enter a stock symbol.
3. Use the arrow buttons to highlight the first letter in the stock symbol. Choose that letter by pressing the **XM** button.

\*Quotes are provided by ComStock, Inc. and cover most stocks listed on the NYSE, AMEX, or NASDAQ. Market information is delayed by approximately 25 minutes.



## Using Your inno Alone

4. Continue selecting letters by using the arrow and **XM** buttons.
5. Select "Enter" when you've entered the entire stock symbol. Your inno is smart enough to automatically complete some stock symbols.
6. You can track up to 20 stock symbols. When you've entered all your desired stock symbols, select "Exit."
7. Press the left arrow button repeatedly (or simply wait a few seconds) until your inno returns to normal operation.



To display Info Extras, press the **Display** button several times until you see sports scores or a stock ticker at the bottom of the display.

## Using Your inno Alone

### Recording XM

Your inno enables you to record XM content for personal, non-commercial use. You may record XM content while listening to live XM or by scheduling a recording session. You can then listen to recorded XM content on the go. You can also personalize your XM content by creating playlists for every mood and occasion.\*

#### Recording a Single Song

1. While you're listening to live XM, select **XM** → **Record** → **Record Song**. Don't worry if you miss the beginning of the song; your inno captures the entire song even if you start up to 10 minutes after the song begins, as long as you're already tuned to that channel. By selecting "Record Song," you instruct your inno to stop recording at the end of the song.
2. You can continue recording the channel you're listening to by selecting **XM** → **Record** → **Rec Channel**.
3. To stop recording at any time, select **XM** → **Record** → **Stop Recording**. If you change channels, inno automatically stops recording.

**SHORTCUT:** To immediately start recording at any time, press and hold the **XM** button until you see the "Recording ..." message appear on the display.

\*XM content cannot be exported from the inno digital audio player. If you wish to own a complete, high-fidelity version of digital content on demand, you should purchase content from XM4Mapster. This may allow you to store the content on multiple devices depending upon the digital rights management of such content.

## Using Your inno Alone

### Recording a Channel

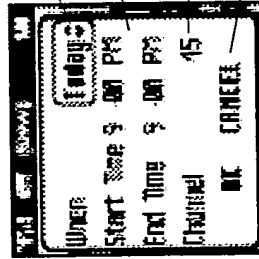
1. While you're listening to live XM, select **XM** → **Record** → **Rec Channel**. You will record the channel you're currently listening to.
2. To stop recording at any time, select **XM** → **Record** → **Stop Recording**. If you change channels, inno automatically stops recording.
3. You can choose to stop recording at the end of the song you're currently listening to by selecting **XM** → **Record** → **Record Song**.

## Using Your inno Alone

### Scheduling a Recording Session

You can set inno to record XM at a later time. When you schedule a recording session, remember that inno must be able to receive a live XM signal when the session begins.

1. To schedule a recording session, select **XM** → **Record** → **Schedule Rec** → **New Session**.
2. The "Scheduled Rec" display allows you to set various options. Use the up and down arrow buttons to adjust each entry. Press the left or right arrow buttons to move to the previous or next option.



You can choose to schedule a session for "Today," "Everyday," or a specific "Date."

Set start and stop times using the up and down arrow buttons. If the session length exceeds the available memory, you will record over the oldest XM tracks in the memory, so you'll always have the latest content.

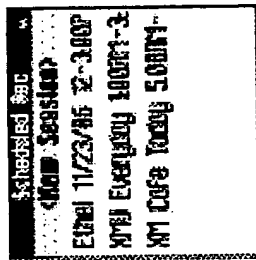
Choose the channel you want recorded. You can enter the channel number using the remote's numeric keys.

Choose "OK" to save the session or "CANCEL" to start over.

inno informs you if there is a scheduling conflict such as overlapping sessions.



3. To edit an existing session, select XM → Record → Schedule Recording. You will see a list of sessions. Highlight the session you wish to edit.



You may not see all the sessions that you scheduled in the past. Sessions that have expired are automatically removed from the list.

4. Choose **Edit Session** to change the session's options.

5. To delete a session, choose **Cancel Session**.

At the scheduled time, your recording session will begin and change channels if needed. Remember that when you schedule a recording session, you are instructing inno to switch to the desired channel.

**NOTE:** Scheduled recording sessions will begin only if inno is put in a home dock or in a boombox with AC power. Your inno can be powered off or on. Make sure your inno can receive a strong XM signal!

## Listening to Recorded XM Content (My Music)

When you see "My Music" at the top of the display, you're listening to XM content that you have recorded and any MP3/WMA files you have transferred to your inno.

1. To switch to "My Music" from "Live XM," press the **Mode** button.
2. Press the up and down arrow buttons to view a list of songs that you have stored on inno. Highlight the song you want to listen to, then press **XM** → **Play** to start playing from that song.
3. You can press the right arrow button to skip to the next song. Press the left arrow button to skip to the previous song.
4. While you're listening to a song, you can also press and hold the right arrow button to fast-forward through that song. Press and hold the left arrow button to reverse through the song.

**NOTE:** In order to access your XM content you have recorded on inno, you must (1) maintain an active XM Satellite Radio subscription, and (2) receive the live XM signal at least 8 hours a month.

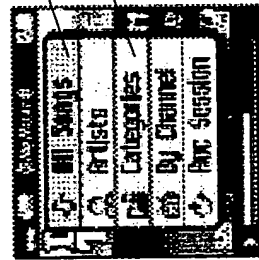
## Using Your inno Alone

### Organizing Your Music

#### Finding Your Music

All songs and tracks that are stored in your inno are normally played in the order that they were recorded or transferred into your inno. You can also sort the selections by artist, category, or channel.

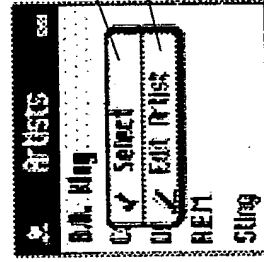
1. While listening to recorded tracks in "My Music," select **XM** → **Find**.
2. Choose how to view your stored music. For example, to sort your stored music by artist, select **Artists**.



View all songs on your inno.

You can also sort songs by artists, by categories, by channels, or by recording sessions.

3. Press the up or down arrow buttons to scroll through the list of artists. Press the **XM** button to select an artist.



Shows the artist's songs in the order they were recorded.

Opens the Edit window, allowing you to add an artist to a playlist, lock or unlock all the artist's songs, or delete all the artist's songs.

4. Once you've selected an artist, you will see a list of songs by that artist that you have recorded.
5. Select the song you want to hear using the arrow and **XM** buttons. Select **XM** → **Play** to begin playing that song.
6. To return to the list of artists, press **XM** → **Find** → **Artists** and select another artist as in steps 3 and 4.
7. You can also sort your tracks by categories or by channels. WMA and MP3 songs show the category or genre that they are assigned to using their ID3 tags, which may or may not be the same as the XM category. WMA and MP3 songs are also assigned to a channel named "MP3/WMA."
8. To view all the songs stored in your inno, press **XM** → **Find** → **All Songs**.

**SHORTCUT:** As soon as you've highlighted a song, simply press the right arrow button to start playback.

## Using Your inno Alone

### Locking and Unlocking XM Content

When you record XM, your inno records over the oldest XM tracks first. This ensures that you always hear the latest XM content. You can "lock" a song or track to prevent inno from recording over it. Locked songs occupy memory on your inno and reduce your available recording time. Remember that you can buy high-fidelity songs or albums from XM+Napster that can be stored either on your inno or on your PC.

1. While you're listening to a song in "My Music," press the up or down arrow buttons to view the list of songs.
2. Highlight the song you want to lock.
3. Select **XM** → **Edit Song** → **Lock Song**.
4. The locked song is indicated with a padlock symbol to the left of the song title.
5. To unlock a song, highlight the song in the list and select **XM** → **Edit Song** → **Unlock Song**.

**SHORTCUT:** To lock the song you're currently listening to, press and hold the **XM** button, then select **Lock Song**.

You can also lock all songs by an artist, in a category, or in a channel. To lock all songs by an artist:

1. Select **XM** → **Organize** → **Artists** → (artist name) → **Lock Artist**.
2. All songs by this artist are displayed with a padlock symbol to the left of the song title. If you add a song to a playlist, that song is automatically locked.

## Using Your inno Alone

### Playlists – Adding Songs

You can create one or more custom lists, called playlists. Each playlist is an index of songs that play in a certain order. You can create a "morning drive" playlist, a "workout" playlist, a "best of" playlist, and more.

1. To add a song to a playlist, first select a song using the up or down arrow buttons. The song may be a recorded XM track, an MP3 track, or a WMA track, including songs purchased through XM+Napster.
2. Select **XM** → **Edit Song** → **Add to Playlist**.
3. You can choose to add the song to an existing playlist or to create a new playlist. To choose an existing playlist, simply highlight and select the playlist name. To create a new playlist, choose **New Playlist** and use the virtual keyboard to name that playlist.
4. The display confirms by showing "(playlist name) (song title) Added."
5. Adding a song to a playlist automatically locks that song.

**SHORTCUT:** When you're in "My Music," you can add the recorded XM song that you're currently hearing to a playlist by pressing and holding the **XM** button, then selecting **Add to Playlist**.

You can add a song to more than one playlist or a song to the same playlist more than once.

You can also add all songs by an artist to a playlist: select **XM** → **Organize** → **Artists** → (artist name) → **Add to Playlist**. You can also add all songs in a particular XM channel or category to a playlist.

## Using Your inno Alone

### Playlists – Removing Entries

You can remove entries from a playlist. Remember that removing a song from one playlist does not remove it from any other playlist, and does not delete that song from inno.

To remove one or more songs from a playlist:

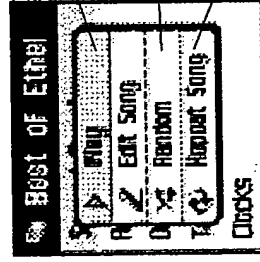
1. Select **XM** → **Playlists** → (playlist name) → **Edit Playlist** → **Remove Songs**.
2. Use the up and down arrow buttons to highlight a song.
3. Press **XM** → **Select**. The song's name will change to green.
4. Use the up and down arrow buttons to highlight another song, and press the **XM** button to select that song. Do this for all the songs you want to remove; these songs are displayed in blue.
5. Select **XM** → **Remove Song(s)** → **Yes**.
6. inno confirms by displaying "Songs Removed."

**SHORTCUT:** Instead of steps 3 and 4, press the right arrow button to select the song you want to remove.

## Using Your inno Alone

### Playlists – Playing

1. Select **XM** → **Playlists** → (playlist name) → **Select**.
2. Choose a song you want to hear and press the **XM** button.
3. You will see the following options:



Play songs in the order listed in the playlist, starting from the selected song.

Play songs in random order, starting from the selected song. To cancel random play, select a song but choose "Play" instead of "Random."

Repeat the selected song. To cancel repeat play, select a song but choose "Play" instead of "Repeat Song."

4. To exit a playlist and return to all songs, select **XM** → **Find** → **All Songs**.

## Playlists – Other Options

Normally, the songs in a playlist appear in the order that they were added.

To rearrange the songs in a playlist:

1. Select **XM** → **Playlists** → **(playlist name)** → **Edit Playlist** → **Arrange Songs**.
2. Use the up and down arrow buttons to highlight a song.
3. "Pick up" that song by pressing the **XM** button. The song title changes to green.
4. Move the song using the up and down arrow buttons.
5. "Put down" the song by pressing the **XM** button. The song title changes back to yellow.
6. Repeat steps 2-5 for any song you want to move. When you're finished, press the left arrow button repeatedly until you return to normal operation.

To rename a playlist:

1. Select **XM** → **Playlists** → **(playlist name)** → **Edit Playlist** → **Rename Playlist**.
2. Use the virtual keyboard to change the name of the playlist.
3. Select "Enter" when you're finished, or "Exit" if you don't want to save your changes.

**NOTE:** You can also manage the playlists on your inno by using the XM+Napster application on your PC.

## Bookmarking Songs

"Bookmarks" are a great way to remember interesting songs. You can view all your bookmarks through the XM+Napster application, look up information about the artist or album, or purchase a complete, high-fidelity version of the song that you may play on multiple devices through XM+Napster. You may also purchase songs by the same artist (or similar artists) through XM+Napster.

To bookmark a song in "My Music":

1. Press the up or down arrow buttons until you highlight the song you want to bookmark.
2. Press **XM** → **Edit Song** → **Bookmark Song**.
3. inno confirms by displaying "Info Added."

**SHORTCUT:** To bookmark the song that you're currently listening to in "My Music," press and hold the **XM** button, then select **Bookmark Song**. You can only bookmark live or recorded XM tracks, not MP3 or WMA tracks.

To bookmark a song in "Live XM":

1. Select **XM** → **Bookmark** → **Bookmark Only**.
2. inno confirms by displaying "Info Added."

## Using Your inno Alone

### Deleting Songs

When you're no longer interested in a song or track, you can delete it from your inno. "Deleting" a song permanently erases it from memory, and is different from "removing" a song from a playlist.

To delete one song from "My Music":

1. Press the up or down arrow buttons until you highlight the song you want to delete.
2. Select **XM** → **Edit Song** → **Delete** → **Yes**.
3. inno confirms the song is erased by displaying "Song Deleted."

**SHORTCUT:** To delete the song that you're currently listening to, press and hold the **XM** button, then select **Delete**.

To delete multiple songs from "My Music":

1. Select **XM** → **Organize** → **Songs**.
2. Use the up and down arrow buttons to highlight a song.
3. Select **XM** → **Select Song**. The song's name will be displayed in green.
4. Use the up and down arrow buttons to highlight another song, and press the **XM** button to select that song. Do this for all the songs you want to remove.
5. Select **XM** → **Delete** → **Yes**.
6. inno confirms that the songs are erased by displaying "Songs Deleted."

**SHORTCUT:** Instead of steps 3 and 4, press the right arrow button to select the song you want to delete.

ENG

## Using Your inno Alone

## System Requirements

The inno will not work with all computers.

The PC system must meet the following requirements:

- Intel® Pentium®- class CPU
- Microsoft Windows XP Home, Windows XP Professional, or Windows 2000 operating system\*
- At least 64 MB of RAM.
- At least 13 MB of available hard disk space for XM+Napster application.
- Internet Explorer 5.1 or higher.
- Windows Media Player 9 or higher; Windows Media Player 10 recommended for Windows XP.
- Active Internet connection; we recommend a broadband (cable, DSL, or fiber) connection for optimal performance.
- inno may not work with all computers meeting these requirements depending on system configuration and user demands on existing hardware and software.

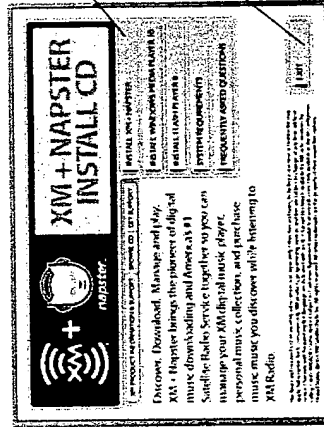
\*The following operating systems are not supported: Windows 95, Windows 98, Windows NT, Windows Me, and Mac OS.

## Setup

We recommend reading this entire section before using your inno with a PC.

To connect your inno to your PC:

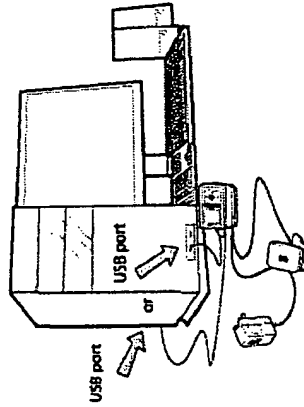
1. If you haven't done so already, disconnect your inno and its dock from your PC.
2. Insert the XM+Napster CD into your computer's CD or DVD drive.
3. The software should start automatically. You should see the following screen on your PC:



Follow the directions indicated on the screen. If you have any questions about the XM+Napster software, see the XM+Napster FAQs at <http://napster.xmradio.com>.

## Using inno with a PC

4. Reboot your PC if necessary, then launch the XM+Napster program from the shortcut on your desktop.
5. Set up inno as shown and plug the USB cable into the PC. You can also connect the USB cable directly between your PC and inno without using the home dock, home antenna, and AC power adapter.



**WARNING:** Only use the USB cable supplied in the package. Other USB cables may not allow your inno to charge its battery or communicate with your PC.

6. Your PC should recognize inno. Close any file folders that appear on your screen. You can manage the contents of inno entirely by using the XM+Napster program.
7. When taking your inno with you, you must disconnect inno from the PC by following the procedure described in "Disconnecting Your inno from the PC" (page 60).

## Using inno with a PC

### Registering with XM+Napster

Choose either the XM+Napster Light service or the XM+Napster service. XM+Napster Light allows you to buy individual songs or albums whenever you want. XM+Napster lets you stream music to your PC for an additional monthly subscription.



	XM+Napster	XM+Napster Light
Manage XM content and MP3/WMA files on your inno	✓	✓
Transfer MP3/WMA files from your PC to your inno	✓	✓
Buy individual songs or albums to keep forever, burn to CD, and transfer onto your inno	✓	✓
Additional monthly subscription with XM+Napster required	✓	
Download and listen to all the Napster music you want on your PC	✓	
Listen to 75+ XM channels on your PC from XM Radio Online	✓	✓
Community and music discovery tools	✓	



## Using inno with a PC

To register, follow these steps:

1. Click File/Sign In on the XM+Napster application. Click on the link for new members.
2. Follow the directions indicated on the registration screen. You must provide your active XM Radio ID and billing ZIP code to register.

## Using inno with a PC

3. If you choose XM+Napster, you must provide a valid credit card. Registering for XM+Napster Light does not require a credit card; you only need one when you purchase individual songs or albums. Simply select "Start XM+Napster Light" instead of entering your billing information.

4. The next time you use XM+Napster, sign in with your user name and password to access the XM+Napster service. You can also use the XM+Napster software off-line, without signing in, and still retain the ability to manage your inno.

## What Can You Do with XM+Napster?

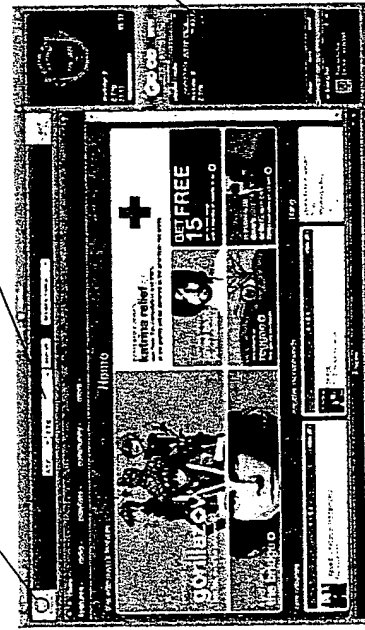
Using XM+Napster, you can:

- Manage songs, playlists, and recording sessions on your inno.
- Transfer MP3 and WMA files between inno and your PC.
- Explore and purchase music from XM+Napster's enormous online store.
- Listen to XM Radio Online.

## Exploring

Explore XM+Napster's online store and community, with over 1.5 million songs, 100,000 albums, and 80,000 artists.

Search by entering an artist name, song title, or album.

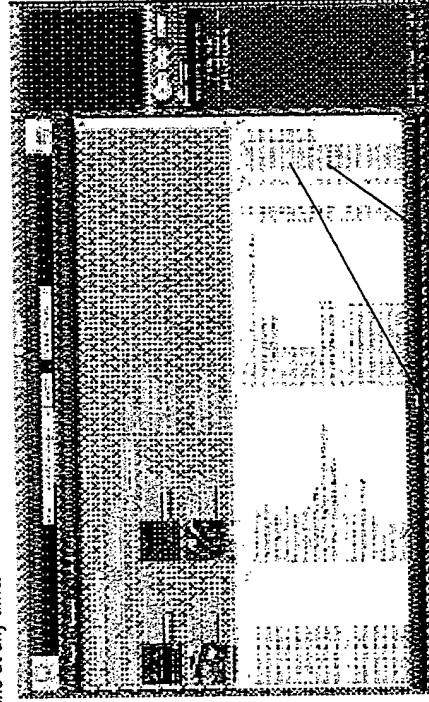


Drag and drop tracks or albums onto the "playlist/radio" pane to play them on your PC.

## Purchasing Music

The XM+Napster store allows you to stream, download, or buy songs or albums.

- Stream** – Listen to a song while your PC is connected to the Internet.
- Download** – Store music on your PC. You can listen to these songs any time, even if your PC is off-line.
- Buy** – Purchase the track or album. You can transfer these songs to your inno at any time.



"buy only" – Only available to buy or to sample a 30-second clip from XM+Napster.

"download" – Available to buy, download, or stream from XM+Napster.

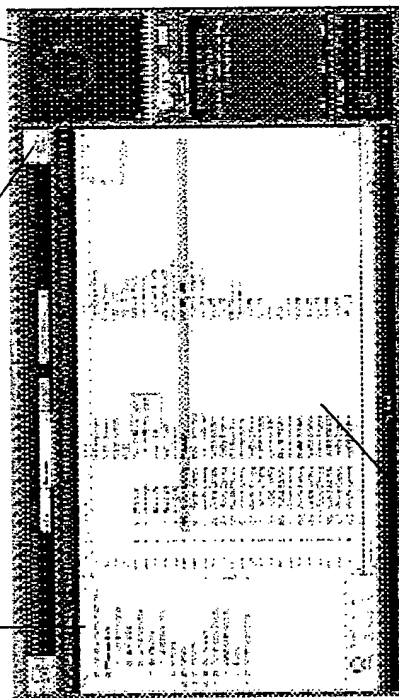
## Using inno with a PC

### Organizing Your Music

The "Folder" pane lets you view the tracks stored on inno or on your PC, playlists, recording sessions, bookmarks, and more. Click on the desired folder to see its contents on the main pane.

View and manage all the XM content you recorded, WMA, and MP3 tracks on your inno and your PC.

Drag and drop tracks or albums onto the "playlist/radio" pane to play them on your PC.



The main pane shows the contents of a folder.

Drag and drop purchased tracks into the "transfer" pane to move them from your PC to your inno.

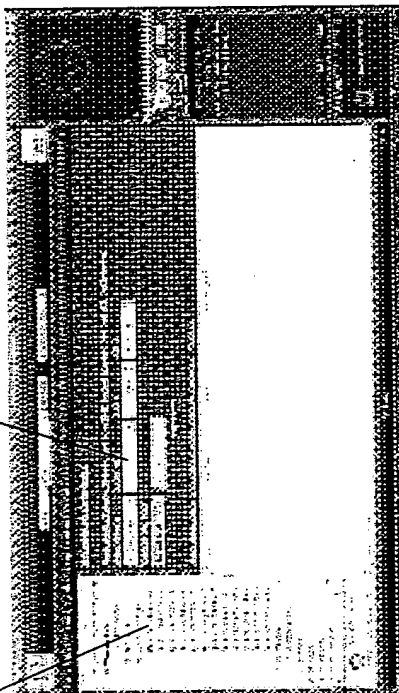
## Using inno with a PC

### Recording Sessions

View and edit your inno recording sessions by selecting Library/inno/XM Recordings on the XM+Napster application.

Create a new recording session or choose an existing session.

Enter the options for the recording session.



## Using inno with a PC

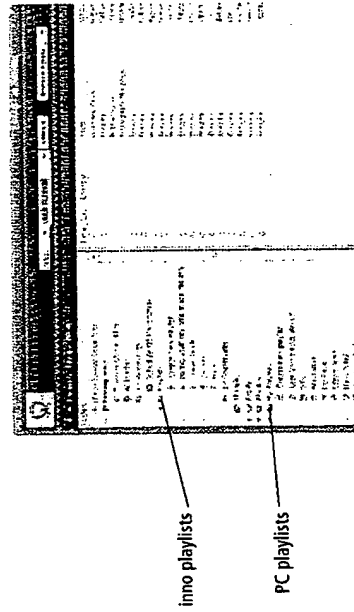
### Playlists

You can manage your inno playlists using XM+Napster. Simply dock your inno, then select **Library/inno/Playlists**. You can create new playlists, or edit or delete any playlists that are stored in your inno.

You can also create and manage playlists for any music content stored on your PC. Select **Library/My Playlists**.

To add a track to any playlist, select that track on the main pane and drag it to the playlist name in the "Folder" pane. Alternatively, right-click on the track name, then select the playlist you want to add the track to.

You can move a PC playlist onto your inno by dragging that playlist name into the **Library/inno/Playlists** line. When you move tracks and playlists onto your inno, you may have to purchase that content from XM+Napster, if you have not done so already.



## Using inno with a PC

### Transferring Between PC and inno



To transfer a track or playlist from your PC to your inno, drag and drop the track or playlist into the "transfer" pane on the lower right-hand side of the XM+Napster application.

You can only transfer songs that you have purchased from XM+Napster or songs that you have ripped from your audio CDs. inno only recognizes file names that use single-byte characters; double-byte and multi-byte character sets (Asian languages such as Chinese, Korean, or Japanese) are not supported.

**WARNING:** Though you can transfer non-MP3/WMA files to your inno using Windows, those files cannot be played as audio files. Furthermore, do not attempt to format the inno storage; doing so may cause damage to the device.

### Disconnecting Your inno From the PC

Before you remove your inno from its dock or unplug the USB cable from the dock or the PC, you must disconnect using one of the following methods:

- In Windows: right-click on the **Safely Remove Hardware** icon , which is on the right side of the Windows taskbar. Select "USB Mass Storage Device," and click on **Stop**.
- On XM+Napster: click on the **Disconnect Device** icon  or select **File/Disconnect portable device**.

If you want to connect inno to your PC again, re-insert inno into its dock.

### Listening to XM Radio Online (XMRO)

XM Radio Online gives you access to over 75 channels of the same amazing programming you hear on XM Satellite Radio, plus 10 select AOL Radio channels for even more choice.

To access XM Radio Online, click on **Home/Radio/XM Radio Online**. Then simply choose your desired channel from the channel list.

Save favorite channels in the preset buttons (at the top of the screen) by dragging a channel onto the desired button. Note that these presets are not the same as the "Favorite Channels" on your inno.


You can enjoy XM Radio Online anywhere you have a PC and a high-speed connection. Remember that you cannot save or transfer XMRO programming onto your inno.



### Using Your CDs or MP3/WMA Files

#### Ripping Your CDs

Use the XM+Napster application to rip tracks from a CD into your Napster library.

1. Insert an audio CD into your PC's CD drive.
2. Click on **Library**, then click on the **CD** icon in the "Folders" pane. You will see a listing of the CD tracks in the main pane.
3. Click the **Rip** icon  on the bottom of the main pane. By default, the tracks will be encoded into the WMA format at 128 kbps. You can change this setting by clicking **File/Options/CD Options**.

#### Importing Tracks Into XM+Napster

If you have already created MP3 or WMA files in your computer, you can import them into your Napster library.

1. Click **File/Import Tracks to My Library ...**
2. Follow the directions on the screen.

#### Burning CDs

Transfer MP3 and WMA files onto a recordable CD or DVD. Please note that the content recorded from XM cannot be burned onto a CD or DVD or otherwise transferred off your inno.

1. Insert a recordable CD or DVD into your PC's CD/DVD drive.
2. Click **Library**.
3. Pull up the **Burn** screen at the bottom of the main pane.
4. Drag and drop tracks into the "Burn" pane.
5. When you've finished selecting tracks, click **Burn Disc**.

For more information, please see the XM+Napster FAQs at <http://napster.xmradio.com>.

## Updating inno Firmware

Occasionally we make improvements to the inno firmware, which is the software that makes your inno work. Updating the firmware is a quick and easy process.

Remember that:

- ▣ Your inno must be docked with a power adapter and must be connected to your PC. You cannot update the firmware if inno is not docked and powered.
- ▣ Your PC must be connected to the Internet

### Using XM+Napster

If you have installed and use XM+Napster, it automatically checks the firmware when you connect inno to your PC. XM+Napster notifies you when it's necessary to update the firmware. Simply follow the instructions.

Don't worry if you miss a firmware update. XM+Napster will always check whether your inno needs an update or not.

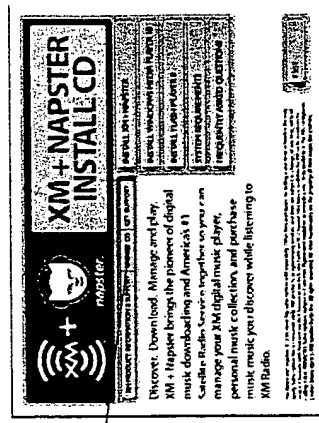
## Updating inno Firmware

### Using the Update Tool

If you don't use XM+Napster, you can update the inno firmware manually.

1. Insert the XM+Napster CD in your PC's CD-ROM or DVD drive. The XM+Napster software should start automatically.
2. Click on **Browse CD**.
3. Click on **Utils**, then click on **XM FirmwareUpdateClient**.
4. Follow the instructions on the PC screen.

You can run this firmware update tool at any time. If the firmware needs to be updated, the tool will install it automatically. If the firmware is already up-to-date, nothing happens.



### Using the Web

Point your Web browser to <http://fwupdtd.xmradio.com> and follow directions.

## FM Modulator



Set the FM frequency that inno transmits on.

Turn the FM modulator on or off manually – or automatically when inserted into a home or car dock.

Adjust the volume level of the FM transmission.

### FM Frequency

Your inno contains a built-in FM modulator (or FM transmitter) that allows you to listen to whatever your inno is playing using an ordinary FM radio. All you have to do is set your inno and the FM radio to the same frequency.

1. Place inno in the home or car dock.
2. Find an unused FM frequency on your FM radio. Note that FM frequency.
3. Select **XM** → **Settings** → **FM Modulator** → **FM Frequency**.
4. Use the up and down arrow buttons to choose the same FM frequency as in step 2. You should hear XM programming over your FM radio when your inno and radio frequencies match.
5. Press the **XM** button to confirm your selection.

### FM Mode

Choose one of these settings:

AUTO	FM transmitter turns on when you place inno in the home or car docks. FM transmitter turns off automatically when you undock inno. inno always returns to AUTO when powered off.
ON	Turns on the FM transmitter. When you use your inno in handheld mode, you must manually turn on the FM transmitter and plug in the earbuds or travel power cable (which acts as an FM antenna).
OFF	Turns off the FM transmitter. Make sure you select this option when you're on an airplane.



### FM Level

When listening to your inno using the FM modulator, you can adjust its volume level to match other audio sources (your CD player, other FM stations, or MP3 player).

1. Select **XM** → **Settings** → **FM Modulator** → **FM Level**.
2. Press the left arrow button to decrease the volume level or the right arrow button to increase the volume level.
3. Press the **XM** button to confirm your selection.

### Aiming the Antenna

For optimal reception of XM's live satellite signal, your inno antenna should have an unobstructed view of the XM satellites in the southern sky. In large cities, XM also has a network of ground repeaters to help increase the signal coverage.

Your inno can help you aim the home antenna to pull in the strongest possible signal.

1. Select **XM** → **Settings** → **Setup** → **Antenna Aiming**.
2. Slowly turn and tilt the antenna. The signal bars on the display will change.



Move the antenna around until either "Satellite" or "Terrestrial" is at least half strength.

3. The antenna aiming screen remains as long as it's needed to help you position the antenna. When you've found the best position, press the left arrow button repeatedly to exit the Settings menu.

4. Select XM channel 1. You should be able to listen to the XM Preview Channel.

## Audio

### Tone

You can adjust the audio tone quality to suit the kind of music you're listening to.

1. Select **XM** → **Settings** → **Preferences** → **Set Tone**.
2. Press the up or down arrow buttons to select either "Bass" or "Treble." Adjust the tone settings by pressing the left or right arrows.
3. Press the **XM** button to save your setting and exit the tone control menu. Then press the left arrow button repeatedly until you return to normal operation.

### Line Out Level

If you connect inno to another stereo system, you can adjust inno's audio level to match other audio sources. This is not a volume control; use the volume control on your stereo instead.

1. Select **XM** → **Settings** → **Setup** → **Line Out Level**.
2. Use the left or right arrow buttons to decrease or increase the audio level.
3. Press the **XM** button to confirm your selection. Then press the left arrow button repeatedly until you return to normal operation.

## Display

### Brightness and Contrast

To change the screen's brightness and contrast:

1. Select **XM** → **Settings** → **Preferences** → **Change Display** → **Brightness**.
2. Press the left or right arrow buttons to adjust brightness.
3. Press the **XM** button to confirm your selection. Then press the left arrow button repeatedly until you return to normal operation.

### Backlight Timer

Your inno screen remains lit for a short time after you press a button. To adjust this time period:

1. Select **XM** → **Settings** → **Preferences** → **Change Display** → **Backlight Timer**.
2. Press the up and down arrow buttons to select the desired time period.
3. Press the **XM** button to confirm your selection.

### Stock Ticker

If you created a stock ticker, you will see stock symbols and their prices displayed at the bottom of inno's display. You can control the way the ticker is displayed.

1. Select **XM** → **Settings** → **Preferences** → **Change Display** → **Display Appearance** → **Stock Ticker**.
2. Select **Scrolling** to see the ticker move across the screen from right to left. Select **By Pages** to view the ticker as if you're flipping pages of a book.
3. Press the **XM** button to confirm your selection.

### Info Extras

If you choose sports or other Info Extras features, you will see sports scores and other information displayed at the bottom of inno's display. You can control the way this information is displayed.

1. Select **XM** → **Settings** → **Preferences** → **Change Display** → **Display Appearance** → **Info Extras**.
2. Select **Scrolling** to see the ticker move across the screen from right to left. Select **By Pages** to view the ticker as if you're flipping pages of a book.
3. Press the **XM** button to confirm your selection.

## Channel Access

### Direct Tune


Normally, as you scroll through live XM channels using the up and down arrow buttons, you can preview the channel list before selecting one channel. inno does not switch to that channel until you push the **XM** button. You can change this so that inno automatically tunes to the channel that you're previewing.

1. Select **XM** → **Settings** → **Preferences** → **Channel Access** → **Direct Tune**.
2. Select **Direct Tune On**.
3. Press the **XM** button to confirm your selection. Then press the left arrow button repeatedly until you return to normal operation.

To return inno to its default behavior, select **Direct Tune Off**.

### Channel Skip/Add

You can simplify the list of channels that you see when you press the up and down arrow buttons. To skip a channel:

1. Select **XM** → **Settings** → **Preferences** → **Channel Access** → **Channel Skip/Add**.
2. You will see a list of channels. Press the **XM** button to skip a channel. You'll see the **Channel Skip** icon  displayed beside the channel name. You can choose to skip more than one channel.
3. To add a channel that has been skipped, highlight that channel then press the **XM** button.
4. Press the left arrow button when you're finished.
5. inno confirms by displaying "Channel List Updated."

You can still tune to a channel directly by using the virtual keypad to enter its channel number.

Channel Skip/Add should not be used as a form of parental control. To completely block access to an XM channel, contact XM Listener Care at 1-800-XM-RADIO (1-800-967-2346).

### Clock and Sleep Timer

#### Time

1. The time is automatically set using the XM signal. Select **XM** → **Settings** → **Setup** → **Set Time** → **Set Clock** → **Select Time Zone** to set the correct time zone for your location.
2. Your inno automatically adjusts for Daylight Savings Time. To turn this feature off, select **XM** → **Settings** → **Setup** → **Set Time** → **Set Clock** → **Daylight Savings Time** → **No**.
3. To display time in 12- or 24-hour format, select the desired format through **XM** → **Settings** → **Setup** → **Set Time** → **Set Clock** → **12/24 Hour Mode**.

#### Sleep Timer

Your inno has a sleep timer that can automatically shut off the unit after a period of time.

1. Select **XM** → **Settings** → **Setup** → **Set Time** → **Sleep Timer**.
2. Select the desired time period.
3. Press the **XM** button to confirm the selection. Your inno will remember this setting the next time you turn it on.

The sleep timer resets to "Off" every time you turn inno off.

## Vehicle Mode

If you listen to your inno in a vehicle, you've probably plugged the power adapter into the cigarette lighter socket. In some vehicles, the cigarette lighter is turned on or off with the ignition key; in other vehicles, the cigarette lighter is powered all the time. To prevent your battery from being drained, choose one of the following settings:

1. Select **XM** → **Settings** → **Setup** → **Set Time** → **Vehicle Mode**.
2. Choose one of the following settings:

Auto ON/OFF	OFF	Choose this option if the cigarette lighter is always powered. You must turn inno on or off using its own power switch.
	ON	Choose this option if the ignition key switches the cigarette lighter on and off.
Delayed Power Off	OFF or 60-180 minutes	Another option if the cigarette lighter is always powered: inno automatically turns off 60 to 180 minutes after you turn it on.

3. The setting is saved even if you turn inno off. The vehicle mode setting is only active when you use the car dock.

## Memory Partition

The internal storage in inno can store recorded XM content and MP3/WMA files. By default, the storage is divided 50/50, but you can select different memory partitions:

setting	typical storage for content recorded from XM	typical storage for PC (MP3 and WMA) tracks
50/50 XM/PC files	25 hours	8 hours
100% XM	50 hours	0 hours

To change the memory partition:

1. Place your inno into the home dock and connect the AC power adapter.
2. Select **XM** → **Settings** → **Setup** → **Memory Partition**.
3. Highlight the desired setting and press the **XM** button.
4. Confirm by selecting **Yes**, or cancel by selecting **No**.

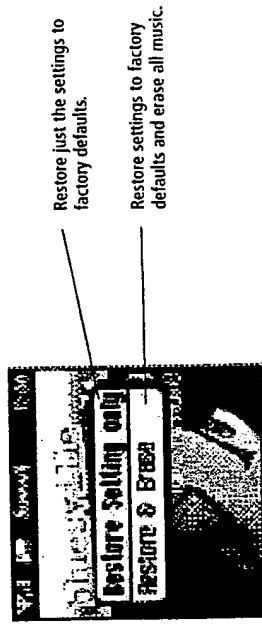
**CAUTION:** When you change the memory partition, you will erase all your stored XM content and MP3/WMA tracks from your inno.

## Settings

### Restoring Factory Defaults

To restore all inno settings and preferences to a "factory fresh" state:

1. Select **XM** → **Settings** → **Setup** → **Factory Defaults**.
2. You should see this display:



3. Confirm by selecting **Yes**, or cancel by selecting **No**.

## Customer Support

### Troubleshooting

If your Inno does not work the way you expect, first consult this troubleshooting guide. To reset your Inno, remove the battery then re-insert it.

If you see this on the display:	You should:
No Signal	Something is blocking the XM signal. Move your Inno away from the obstructed area (e.g., an underground garage).
Antenna	Plug the antenna into the home or car dock. Make sure the antenna wire is not bent or broken.
Off Air	The channel you've selected is not currently broadcasting. Tune to another channel.
Loading	Your Inno is acquiring audio or program information from the XM signal. This message should disappear in a few seconds in good signal conditions.
Updating	XM is updating your Inno with the latest encryption code. Simply wait a few seconds until the update is done. — OR — You may be attempting to tune to a channel that is blocked or that you cannot receive with your subscription package. To receive that channel, contact XM Satellite Radio at 1-800-967-2346.
--- (no artist or title)	No program information, such as artist name or song title, exists.
Channel	You are attempting to tune to a channel that is not available.
All Recording Features Not Available	Activate your XM subscription to enable you to store XM programming on your Inno.
This Channel Not Available for Recording	Some programming cannot be recorded due to restrictions placed by the content owners.
This Program Not Available for Recording	Some programming cannot be recorded due to restrictions placed by the content owners.
Connect to XM Antenna Within 30 Days to Avoid Interruption in Listening to XM Recordings	You must receive a live XM signal for at least 8 hours a month. This authenticates your XM subscription and ensures that you can continue to enjoy your recorded XM content and live XM programming.
Please Connect to XM Antenna to Confirm Valid Subscription	Select "Live XM" and make sure you get a strong signal.
Activation Required for Playback	Activate your XM subscription.


### Troubleshooting

If this happens:	You should:
There is no power or your Inno shuts off quickly.	Your Inno battery may be low. Charge the battery by putting your Inno in the dock station and plugging in the AC adapter.
Inno shuts off unexpectedly.	Check whether you set the sleep timer, and set it to "Off" if desired. Check whether "Vehicle Mode/Delayed Power Off" is set, and set it to "Off" if desired. Inno remembers the "Vehicle Mode" setting even when you turn the device off.
You do not receive all the XM channels you have subscribed to.	Check that you have not skipped any channels (page 74). If you still do not receive all channels, your Inno may not be activated. Contact XM Satellite Radio.
No audio.	Check all connections between your Inno and your stereo system.
No song title or artist name is displayed.	Nothing is wrong with your Inno. That information may be in the process of being updated. Some channels, such as news and sports, may not have such information.
No audio when listening to Inno through an FM radio.	Check that your Inno and your radio are tuned to the same FM frequency.
Audio fades or has static when listening through an FM radio.	You might be hearing interference from another FM station. Set your Inno and your radio to a different FM frequency.
Audio sounds too soft or is distorted when listening to an FM radio.	Raise or lower the FM audio level until the sound quality improves.
XM Instant Traffic and Weather channels sound different from other channels.	Nothing is wrong with your Inno. These channels use a different audio technology than the other XM channels.
Controls do not respond.	Check whether the power switch is in the "hold" position. If so, slide it to the center position to unlock the controls.
The controls still refuse to respond, the display does not change, or the backlight does not turn on or off.	Reset your Inno by removing and re-inserting the battery.
Battery level meter does not match the expected charge or playback time.	Fully charge the battery, then use your Inno until the battery is exhausted. This calibrates the battery level meter.

## Troubleshooting

If this happens:		You should:	
Inno does not communicate with your PC.		Check the power and USB connections between the dock and your PC. Be sure to use the supplied USB cable; any others may prevent your Inno from charging or communicating properly with your PC. Remove your Inno from its dock station, then re-insert.	
Artist and song title information does not display correctly.		Inno may not correctly show the artist and song information (ID3 tags) of certain foreign songs.	
You cannot transfer songs that you downloaded with Napster to Go <sup>™</sup> Inno.		Inno is not compatible with Napster. To Go's monthly subscription service. To transfer songs from your PC to your Inno, you must purchase individual songs or albums from XM+Napster, Light or XM+Napster.	

## Specifications

Inno Player	
Dimensions	56 mm (W) x 94 mm (H) x 16 mm (D) 2.2 in (W) x 3.7 in (H) x 0.6 in (D)
Weight	128 g 4.5 oz
Storage capacity	1 GB (The capacity of the built-in memory may be less than indicated; a portion of the memory is used by the Inno firmware.)
Music file formats	MP3 and WMA fixed bitrates: 32, 48, 64, 96, 128, 160, 192, 256, 320 kbps MP3 and WMA variable bitrates: 64-128, 128-256, 160-320 kbps
Audio output	3.5 mm mini-stereo jack
Antenna connector (home and car dock)	RF SMB
Battery	Type: lithium ion Voltage: 3.7 V Capacity: 1750 mAh
External power	Voltage: 5 V DC Current: 2000 mA Polarity: 

ENG



## Specifications

Remote	
Dimensions	39 mm (W) x 95 mm (H) x 12 mm (D) 1.5 in (W) x 3.7 in (H) x 0.47 in (D)
Weight	40 g 1.4 oz
Battery	Type: CR2032 Voltage: 3 V
Model Numbers	
Inno player	GEX-INNO1
Home kit	CD-INHOME1
Car accessory kit	CD-INCAR1

## Patent Information

**Technology.** It is prohibited to copy, decompile, disassemble, reverse engineer, hack, manipulate, or otherwise make available any technology incorporated in receivers compatible with the XM Satellite Radio System or that support the XM website, the Online Service or any of its content. Furthermore, the AMBT<sup>®</sup> voice compression software included in this product is protected by intellectual property rights including patent rights, copyrights, and trade secrets of Digital Voice Systems, Inc. You also agree not to upload, post, transmit or otherwise make available any material that contains software viruses or any other computer code, files, or programs designed to interrupt, disable, or limit the functionality of the XM website or the Online Service. Furthermore, the music, talk, news, entertainment, data, and other content on the Services are protected by copyright and other intellectual property laws and all ownership rights remain with the respective content and data service providers. You are prohibited from any export of the data (or derivative thereof) except in compliance with applicable export laws, rules, and regulations. The user of this or any other software contained in an XM Radio or the XM website and all software used in connection with either is explicitly prohibited from attempting to copy, decompile, reverse engineer, or disassemble the object code, or in any other way convert the object code into human-readable form. The software is licensed solely for use within this product.

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## FCC Statement

*This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:*

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

**CAUTION:** Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## LIMITED WARRANTY

### WARRANTY VALID ONLY IN COUNTRY OF PRODUCT PURCHASE

#### WARRANTY

Pioneer Electronics (USA) Inc. (PUSA), and Pioneer Electronics of Canada, Inc. (POC), warrants that products distributed by PUSA in the U.S.A., and by POC in Canada that fail to function properly under normal use due to a manufacturing defect when installed and operated according to the owner's manual enclosed with the unit will be repaired or replaced with a unit of comparable value, at the option of PUSA or POC, without charge to you for parts or actual repair work. Parts supplied under this warranty may be new or rebuilt at the option of PUSA or POC.

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(warranty continues next page)

## Customer Support

### PRODUCT WARRANTY PERIOD

Portable Satellite Radio..... 1 Year Parts & Labor  
Portable Satellite Radio Battery..... 90 Days Parts & Labor

The warranty period for retail customers who rent the product commences upon the date product is first put into use (a) during the rental period or (b) retail sale, whichever occurs first.

### WHAT IS NOT COVERED

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(warranty continues next page)

## Customer Support

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IN CANADA - EXCEPT AS EXPRESSLY PROVIDED HEREIN, THERE ARE NO REPRESENTATIONS, WARRANTIES, OBLIGATIONS OR CONDITIONS, IMPLIED, STATUTORY OR OTHERWISE, APPLICABLE TO THIS PRODUCT.

### TO OBTAIN SERVICE

PUSA has appointed a number of Authorized Service Companies throughout the U.S.A. should your product require service. To receive warranty service you need to present your sales receipt showing place and date of original owner's transaction. If shipping the unit you will need to package it carefully and send it, transportation prepaid by a traceable, insured method, to an Authorized Service Company. Package the product using adequate padding material to prevent damage in transit. Include your name, address and telephone number where you can be reached during business hours.

On all complaints and concerns call Customer Support at 1-800-421-1404

## DISPUTE RESOLUTION

Following our response to any initial request to Customer Support, should a dispute arise between you and Pioneer, Pioneer makes available to you, without charge, its Complaint Resolution Program. You are required to use the Complaint Resolution Program before you exercise any rights under, or seek any remedies, created by Title I of the Magnuson-Moss Warranty-Federal Trade Commission Improvement Act, 15 U.S.C. 2301 et seq.

To use the Complaint Resolution Program call 1-800-421-1404 and explain to the customer service representative the problem you are experiencing, steps you have taken to have the product repaired during the warranty period and the name of the authorized Distributor / Dealer from whom the Pioneer product was purchased. After the complaint has been explained to the representative, a resolution number will be issued. Within 40 days of receiving your complaint, Pioneer will investigate the dispute and will either: (1) respond to your complaint in writing informing you what action Pioneer will take, and in what time period, to resolve the dispute; or (2) respond to your complaint in writing informing you why it will not take any action.

For hook-up and operation of your unit or to locate an Authorized Service Company, please call or write:

PIONEER ELECTRONICS SERVICE, INC.  
P.O. BOX 1760  
LONG BEACH, CALIFORNIA 90810  
1-800-421-1404  
<http://www.pioneerelectronics.com>

# Pioneer



PIONEER ELECTRONICS SERVICE, INC.  
P.O. BOX 1760  
LONG BEACH, CALIFORNIA 90810  
1-800-421-1404  
<http://www.pioneerelectronics.com>

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### **Related Proceedings Appendix**

The Opinion of the Board of Patent Appeals and Interferences in this action,  
Appeal No. 2006-1365, dated April 27, 2006.



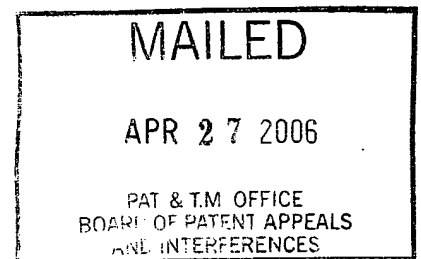
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

*Ex parte* STEPHEN A. EWALD

Appeal No. 2006-1365  
Application No. 10/672,133

ON BRIEF



Before OWENS, BAHR, and NAPPI, *Administrative Patent Judges*.  
OWENS, *Administrative Patent Judge*.

*DECISION ON APPEAL*

This appeal is from a rejection of claims 1-19, which are  
all of the pending claims.

*THE INVENTION*

The appellant claims a system and method for purchasing  
goods and services using a broadcast receiver. Claim 1 is  
illustrative:

1. A system for purchasing goods and services linked with  
broadcast media, comprising:

Appeal No. 2006-1365  
Application No. 10/672,133

one or more broadcast receivers that receive a broadcast media including information relating to goods and services that can be purchased by persons receiving the media, the receiver further selectively recording the purchase data for goods and services that a person purchases relating to the broadcast media; and

one or more servers that selectively receive and verify purchase data sent from the one or more receivers.

#### *THE REFERENCE*

Kesling et al. (Kesling)                      2002/0132575                      Sep. 19, 2002

#### *THE REJECTION*

The claims stand rejected as follows: claims 1-13 and 15-19 under 35 U.S.C. § 102(e) as anticipated by Kesling, and claim 14 under 35 U.S.C. § 103 as obvious over Kesling in view of official notice.

#### *OPINION*

We affirm the aforementioned rejections.

Kesling discloses systems and methods for facilitating mobile commerce (§ 0011). If a radio listener wants to purchase a product that has just been advertised, the listener can press a select button (1220) to receive further information regarding the product such as price and availability, and "[t]he listener might even complete the transaction using radio 20, which, since it includes the high power wireless transceiver, can function as a conventional text pager" (§ 0066). "[D]uring the airing of a



Appeal No. 2006-1365  
Application No. 10/672,133

vitamin advertisement, users would push select button 1220 to purchase the vitamin product.... After select button 1220 is pushed, the system administrator would immediately receive the user's order through a wireless network" (§ 0090).

The appellant argues that "the broadcast receiver of *Kesling, et al.*, discloses at most an 'informational request,' and not a 'purchase request' as claimed the [sic] present invention" (brief, page 5), and that "the most reasonable interpretation of the term 'transaction' in this passage of *Kesling, et al.* [i.e., '[t]he listener might even complete the transaction using radio 20, which, since it includes the high power wireless transceiver, can function as a conventional text pager' (§ 0066)], appears to be that the transaction of the listener obtaining further information can be completed through the text messaging of the wireless transceiver" (brief, page 6). Kesling's disclosure that "during the airing of a vitamin advertisement, users would push select button 1220 to purchase the vitamin product" (§ 0090) indicates that the transaction referred to by Kesling is a purchase.

The appellant argues that the only technical detail disclosed by Kesling is that the broadcast receiver includes a high power wireless transceiver and can function as a

Appeal No. 2006-1365  
Application No. 10/672,133

conventional text pager (§ 0066), and that this disclosure would not have enabled one of ordinary skill in the art to create a broadcast receiver-generated purchase request (brief, page 7; reply brief, page 2). The appellant has not provided evidence in support of that argument, and arguments of counsel cannot take the place of evidence. See *In re De Blauwe*, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984); *In re Payne*, 606 F.2d 303, 315, 203 USPQ 245, 256 (CCPA 1979); *In re Greenfield*, 571 F.2d 1185, 1189, 197 USPQ 227, 230 (CCPA 1978); *In re Pearson*, 494 F.2d 1399, 1405, 181 USPQ 641, 646 (CCPA 1974). Moreover, the similar lack of technical detail in the appellant's specification indicates that if one of ordinary skill in the art could carry out a radio-generated purchase based upon the appellant's disclosure at the time of the appellant's invention, that person could do the same given Kesling's disclosure.

For the above reasons we are not convinced of reversible error in the examiner's rejections.

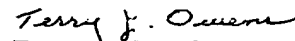
Appeal No. 2006-1365  
Application No. 10/672,133


*DECISION*


The rejections of claims 1-13 and 15-19 under  
35 U.S.C. § 102(e) over Kesling, and claim 14 under  
35 U.S.C. § 103 over Kesling in view of official notice, are  
affirmed.

No time period for taking any subsequent action in  
connection with this appeal may be extended under 37 CFR  
§ 1.136(a).

*AFFIRMED*

  
Terry J. Owens  
Administrative Patent Judge

  
Jennifer D. Bahr  
Administrative Patent Judge

  
Robert E. Nappi  
Administrative Patent Judge

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